

FCC CERTIFICATION TEST REPORT

Applicant	:	HANSHOW PTE. LTD.
Address	:	138 ROBINSON ROAD #02-33 OXLEY TOWER SINGAPORE(068906)
Manufacturer	:	HANSHOW PTE. LTD.
Address	:	138 ROBINSON ROAD #02-33 OXLEY TOWER SINGAPORE(068906)
Equipment under Test	:	electronic shelf label
Model No.	:	Nebular Ultra 346Q-N
Trade Mark	:	N/A
FCC ID	:	2BPF3-NU1-346Q
Report No.	:	LS-R26041307-7F01
Issue Date	:	Jun. 02, 2026



LabSure Testing Services (Suzhou) Co., Ltd.

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Test Report Declare

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Address	:	138 ROBINSON ROAD #02-33 OXLEY TOWER SINGAPORE(068906)
Equipment under Test	:	electronic shelf label
Model No.	:	Nebular Ultra 346Q-N
Trade Name	:	N/A

Test Standard Used:

47 CFR FCC Part 15 Subpart C (Section 15.247)

Test Procedure Used:

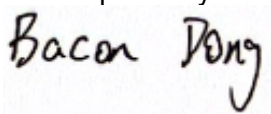
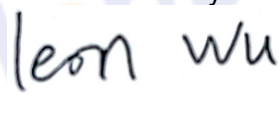
ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024;

We Declare:

The equipment described above is tested by LabSure Testing Services (Suzhou) Co., Ltd. and in the configuration tested the equipment complied with the standards specified above. The test results are contained in this test report and LabSure Testing Services (Suzhou) Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

After test and evaluation, our opinion is that the equipment provided for test compliance with the requirement of the above FCC&ISED standards.

Report No:	LS-R26041307-7F01		
Date of Receipt:	Apr. 24, 2026	Date of Test:	May. 27, 2026 ~ May. 31, 2026

Prepared By: 	Reviewed By: 	Authorized By: 
Bacon Dong/Engineer	Leon Wu/Director	Chris Zhong/EMC Manager

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of LabSure Testing Services (Suzhou) Co., Ltd. The results in this report apply to the test sample(s) mentioned above at the time of the testing period only and are not to be used to indicate applicability to other similar products. This report does not imply that the product(s) has met the criteria for certification. The results reported herein have been performed in accordance with the laboratory's terms of accreditation.

Revision History

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	Jun. 02, 2026	

1. Summary of Test Results

The EUT have been tested according to the applicable standards as referenced below.		
Description of Test Item	Standard	Verdict
6 dB Bandwidth	FCC Part 15.247 (a) (2)	Pass
Peak Output Power	FCC Part 15.247 (b) (3)	Pass
Power Spectral Density	FCC Part 15.247 (e)	Pass
Band Edge Compliance (conducted method)	FCC Part 15.247 (d)	Pass
Radiation Emission	FCC Part 15.209 FCC Part 15.205	Pass
RF Conducted Spurious Emissions	FCC Part 15.247 (d)	Pass
Emission in Restricted Frequency Bands	FCC Part 15.209 FCC Part 15.205	Pass
Power Line Conducted Emission	FCC Part 15.207	N/A
Antenna Requirement	FCC Part 15.203	Pass
Note: The measurement result for the sample received is <Pass> according to < ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024; FCC CFR 47 Part 2, FCC CFR 47 Part 15C(Part 15.247)> when <Simple Acceptance> decision rule is applied.		

2. General Test Information

2.1. Description of EUT

EUT* Name	: electronic shelf label
Model Number	: Nebular Ultra 346Q-N
Test Model	: Nebular Ultra 346Q-N
Hardware Version	: N/A
Software Version	: N/A
Difference of model number	: N/A
EUT function description	: Please reference user manual of this device.
Power Supply	: DC 3V by Polymer Li-ion built-in battery
Radio Specification	: 2.4GHz SRD
Operation Frequency	: 2402MHz-2480MHz
Modulation	: GFSK
Data Rate	: 500k bps
Antenna Type	: PCB Antenna
Antenna Gain	: PCB antenna Maximum PK gain: -2.02 dBi (Declare by customer and the lab isn't responsible for the value)
Serial Number	: N/A

Channel information							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
4	2402	44	2422	84	2442	124	2462
5	2402.5	45	2422.5	85	2442.5	125	2462.5
6	2403	46	2423	86	2443	126	2463
7	2403.5	47	2423.5	87	2443.5	127	2463.5
8	2404	48	2424	88	2444	128	2464
9	2404.5	49	2424.5	89	2444.5	129	2464.5
10	2405	50	2425	90	2445	130	2465
11	2405.5	51	2425.5	91	2445.5	131	2465.5
12	2406	52	2426	92	2446	132	2466
13	2406.5	53	2426.5	93	2446.5	133	2466.5
14	2407	54	2427	94	2447	134	2467
15	2407.5	55	2427.5	95	2447.5	135	2467.5
16	2408	56	2428	96	2448	136	2468
17	2408.5	57	2428.5	97	2448.5	137	2468.5
18	2409	58	2429	98	2449	138	2469
19	2409.5	59	2429.5	99	2449.5	139	2469.5
20	2410	60	2430	100	2450	140	2470
21	2410.5	61	2430.5	101	2450.5	141	2470.5
22	2411	62	2431	102	2451	142	2471
23	2411.5	63	2431.5	103	2451.5	143	2471.5
24	2412	64	2432	104	2452	144	2472
25	2412.5	65	2432.5	105	2452.5	145	2472.5
26	2413	66	2433	106	2453	146	2473
27	2413.5	67	2433.5	107	2453.5	147	2473.5
28	2414	68	2434	108	2454	148	2474
29	2414.5	69	2434.5	109	2454.5	149	2474.5
30	2415	70	2435	110	2455	150	2475
31	2415.5	71	2435.5	111	2455.5	151	2475.5
32	2416	72	2436	112	2456	152	2476
33	2416.5	73	2436.5	113	2456.5	153	2476.5
34	2417	74	2437	114	2457	154	2477
35	2417.5	75	2437.5	115	2457.5	155	2477.5
36	2418	76	2438	116	2458	156	2478
37	2418.5	77	2438.5	117	2458.5	157	2478.5
38	2419	78	2439	118	2459	158	2479
39	2419.5	79	2439.5	119	2459.5	159	2479.5
40	2420	80	2440	120	2460	160	2480
41	2420.5	81	2440.5	121	2460.5		
42	2421	82	2441	122	2461		
43	2421.5	83	2441.5	123	2461.5		

Remark: The information in this section is provided by the applicant or manufacturer, the laboratory is not liable to the accuracy, suitability, reliability or/and integrity of the information.

2.2. Accessories of EUT

Description of Accessories	Manufacturer	Model number	Description	Remark
N/A	N/A	N/A	N/A	N/A

2.3. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	EMC Compliance	SN
Notebook	ASUS	FX506L	N/A	Supplied by lab

2.4. Block diagram of EUT configuration for test

The test software was used to control EUT work in Continuous Tx mode, and select test channel, wireless mode as below table.

Tested mode, channel, information			
Mode	Setting Tx Power	Channel	Frequency (MHz)
GFSK	Default	CH Low	2402
	Default	CH Middle	2441
	Default	CH High	2480

2.5. Test environment conditions

During the measurement the environmental conditions were within the listed ranges:

Environment Parameter	Selected Values During Tests
Relative Humidity	40-75%
Atmospheric Pressure:	86-106 kPa
Temperature	20-28°C
Voltage:	N/A

2.6. Deviations of test standard

No deviation.

2.7. Test laboratory

Lab Information	Company Name: LabSure Testing Services (Suzhou) Co., Ltd. Address: Phase II, No.16 Runsheng Road, Suzhou Industrial Park, Suzhou, People's Republic of China. Tel: +86-0512-62531270, E-mail: labsure@lab-sure.com, www.lab-sure.com
Accreditation Certificate	A2LA (Certificate No.: 7346.01) LabSure Testing Services (Suzhou) Co., Ltd. has been assessed and proved to be in compliance with A2LA. FCC (FCC Designation No.: CN1397) LabSure Testing Services (Suzhou) Co., Ltd. has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules. IC (IC Designation No.: 32952; CAB No.:CN0182) LabSure Testing Services (Suzhou) Co., Ltd. has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules.
Note 1: All tests measurement facilities use to collect the measurement data are located at Phase II, No.16 Runsheng Road, Suzhou Industrial Park, Suzhou, China. Note 2: For below 30MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. These measurements below 30MHz had been correlated to measurements performed on an OFS. Note 3: The test anechoic chamber in LabSure Testing Services (Suzhou) Co., Ltd. had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.	

2.8. Measurement uncertainty

Test Item	Uncertainty
Bandwidth	0.14%
Peak Output Power (Conducted) (Spectrum Analyzer)	0.12 dB (10 MHz $\leq$ f < 3.6 GHz); 0.32 dB (3.6 GHz $\leq$ f < 8 GHz)
Peak Output Power (Conducted) (Power Sensor)	0.51 dB
Power Spectral Density	0.12 dB (10 MHz $\leq$ f < 3.6 GHz); 0.32 dB (3.6 GHz $\leq$ f < 8 GHz)
Frequencies Stability	6.7 x 10 ⁻⁸ (Antenna couple method) 3.4 x 10 ⁻⁸ (Conducted method)
Conducted Spurious Emissions	0.12 dB (10 MHz $\leq$ f < 3.6 GHz); 0.32 dB (3.6 GHz $\leq$ f < 8 GHz) 0.52 dB (8 GHz $\leq$ f < 22 GHz)
Uncertainty for Radio Frequency (RBW < 20 kHz)	3×10 ⁻⁷
Uncertainty for Radiation Emission Test (9kHz - 1 GHz)	9kHz-30MHz: 4.5 dB 30MHz-1000MHz: 4.2 dB
Uncertainty for Radiation Emission Test (1 GHz - 40 GHz)	1GHz – 6GHz: 4.3 dB 6GHz – 18GHz: 4.6 dB

	18GHz – 40GHz: 4.3 dB
Uncertainty for Power Line Conduction Emission Test	3.4 dB (150 kHz - 30 MHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

3. Equipment Used During Test

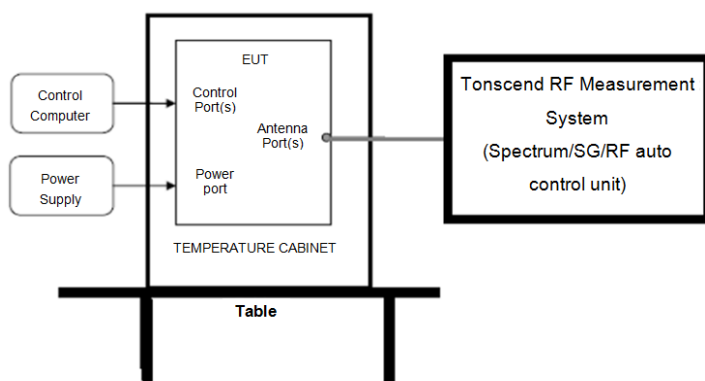
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
RF Conducted Test					
EXG Analog Signal Generator	Keysight	N5173B	MY53270968	2026/02/11	1 Year
MXG Vector Signal Generator	Keysight	N5182A	MY50143288	2026/02/11	1 Year
PXA Signal Analyzer	Keysight	N9030B	MY56320639	2026/03/14	1 Year
PXA Signal Analyzer	Keysight	N9010A	MY53281492	2026/02/11	1 Year
Wideband Radio Communication Tester	R&S	CMW500	158800	2026/02/11	1 Year
Power Sensor	KEYSIGHT	U2021XA	MY59150007	2026/02/11	1 Year
DC Power Supply	inSTEK	PSP-2010	EN122317	2026/01/13	1 Year
Test Software	MWRFtest	MTS8200	N/A	N/A	N/A
Radiated Spurious Emission 3m EMI Chamber					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
3m Anechoic Chamber	CeRuiTong	3m-SAC	N/A	2024/05/10	3 Year
EMI Test Receiver	R&S	ESCi7	101138	2026/01/25	1 Year
Signal Analyzer	R&S	FSV40-N	101730	2026/01/25	1 Year
Hybrid antenna	TESEQ	CBL6141B	27421	2024/01/10	3 Year
Horn Antenna	ETS	ETS 3117	157735	2024/01/19	3 Year
Pre-Amplifier_HF	COM-MW	DPA8-1000-18000-1012	05231357	2026/01/25	1 Year
Low Noise Amplifier	Tonscend	TAP10M1G40N	806JSAP039904251006	2026/01/25	1 Year
Temperature, humidity and pressure recorder	Huahanwei	TH10R	c0222020002F	2026/1/29	1 Year
Test software	TONSCEND	JS35-RSE	5.0.1	N/A	N/A
Power Line Conducted Emissions Test					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
EMI Test Receiver	Rohde & Schwarz	ESCi3	101705	2026/01/25	1 Year
Two-Line V-Network	Rohde & Schwarz	ENV216	101063	2026/01/25	1 Year
Test software	TONSCEND	JS32-CE	5.0.0	N/A	N/A

4. 6 dB Bandwidth

4.1. General Information

Test date	May. 29, 2026	Test engineer	Jimmy Qu	
Climate condition	Ambient temperature	21.5℃	Relative humidity	67.5%
	Atmospheric pressure	101.51kPa		
Test place	EMC Room 1#			

4.2. Block diagram of test setup



4.3. Limits

FCC Part15 (15.247), Subpart C			
Section	Test Item	Limit	Frequency Range (MHz)
FCC Part 15.247 (a) (2)	6dB Bandwidth	$\geq 500\text{kHz}$	2400-2483.5

4.4. Test procedure

(1) Connect EUT's antenna output to spectrum analyzer by RF cable.

(2) 6 dB Bandwidth set the spectrum analyzer as follows:

RBW: 100 kHz
 VBW: 300 kHz
 Detector Mode: Peak
 Sweep time: auto
 Trace mode: Max hold

(3) Allow the trace to stabilize, measure the 6 dB of signal.

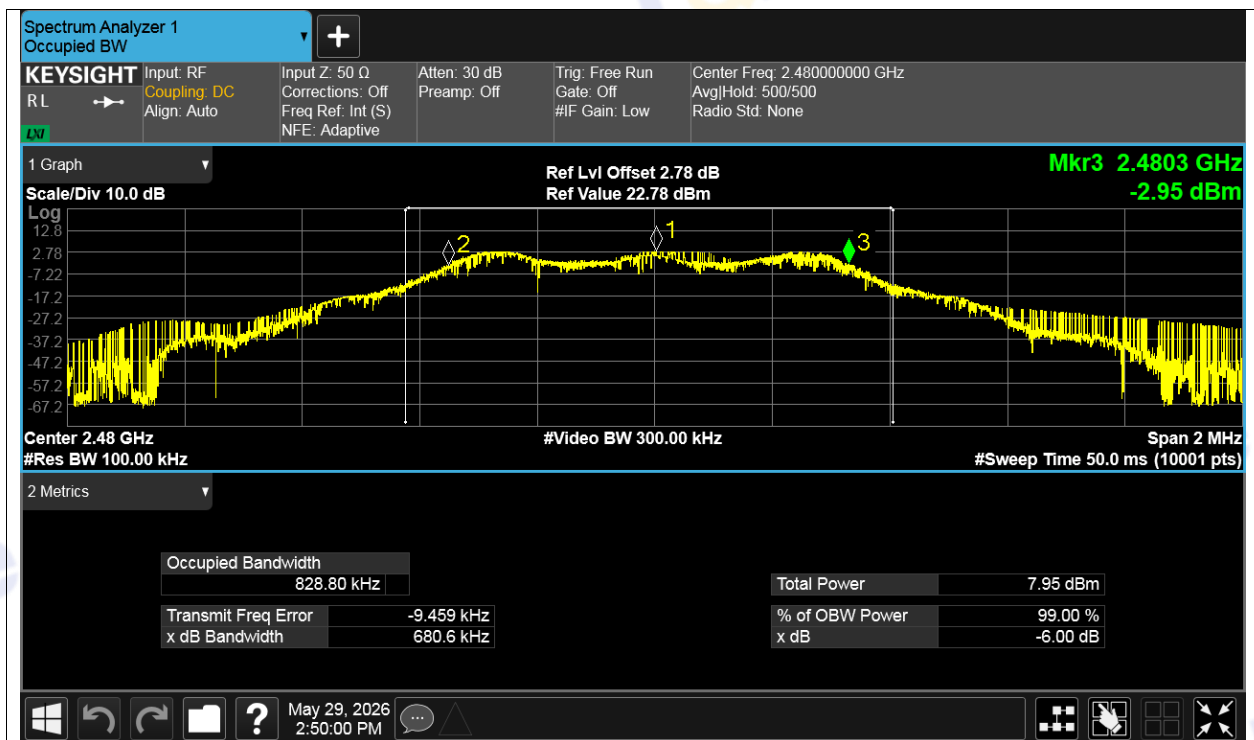
4.5. Test result

Condition	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	2402	Ant1	0.678	0.5	Pass
NVNT	2441	Ant1	0.681	0.5	Pass
NVNT	2480	Ant1	0.681	0.5	Pass

4.6. Original test data

6 dB Bandwidth





5. Maximum Peak Output Power

5.1. General Information

Test date	May. 29, 2026	Test engineer	Jimmy Qu	
Climate condition	Ambient temperature	21.5℃	Relative humidity	67.5%
	Atmospheric pressure	101.51kPa		
Test place	EMC Room 1#			

5.2. Block diagram of test setup

Same with 4.1

5.3. Limits

FCC Part15 (15.247) Subpart C			
Section	Test Item	Limit	Frequency Range (MHz)
FCC Part 15.247 (b)(3)	Output Power	1 watt or 30dBm	2400-2483.5
		4 watt or 36dBm (EIRP)	

If transmitting antennas of directional gain greater than 6dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

5.4. Test procedure

(1) Connect EUT's antenna output to spectrum analyzer by RF cable.

(2) Set the spectrum analyzer as follows:

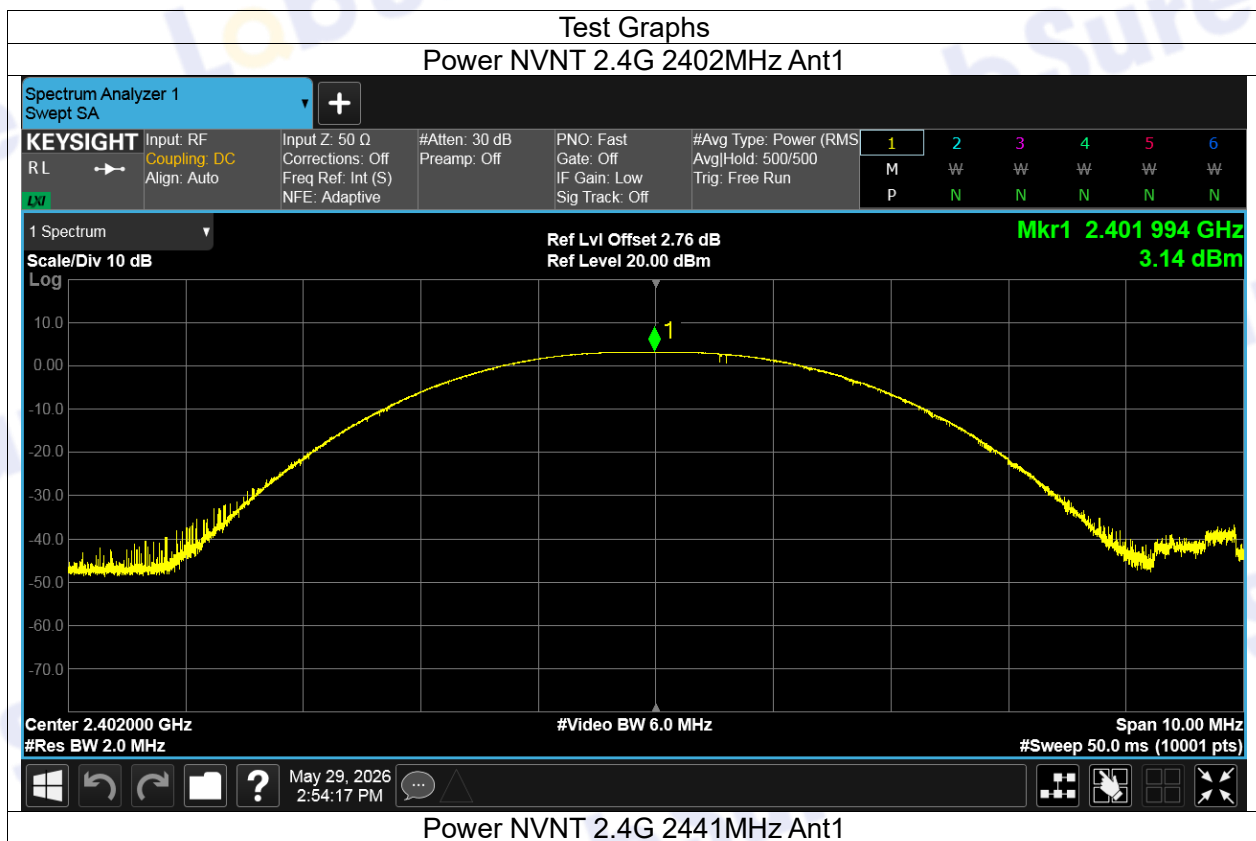
RBW:	≥DTS bandwidth
VBW:	≥3 x RBW
Span	≥3 x RBW
Detector Mode:	Peak
Sweep time:	auto
Trace mode	Max hold

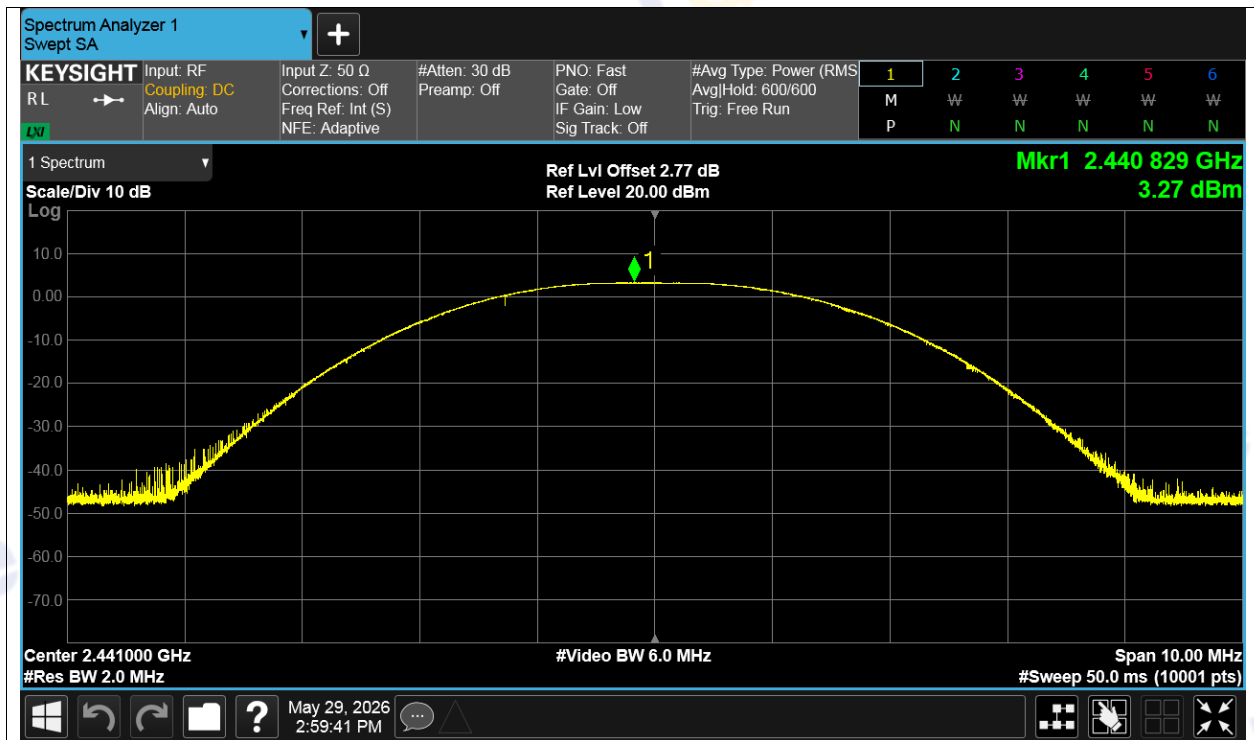
(3) Allow the trace to stabilize, Use the instrument's band/channel power measurement function with the band limits set equal to the DTS bandwidth edges measure out the PK output power.

5.5. Test result

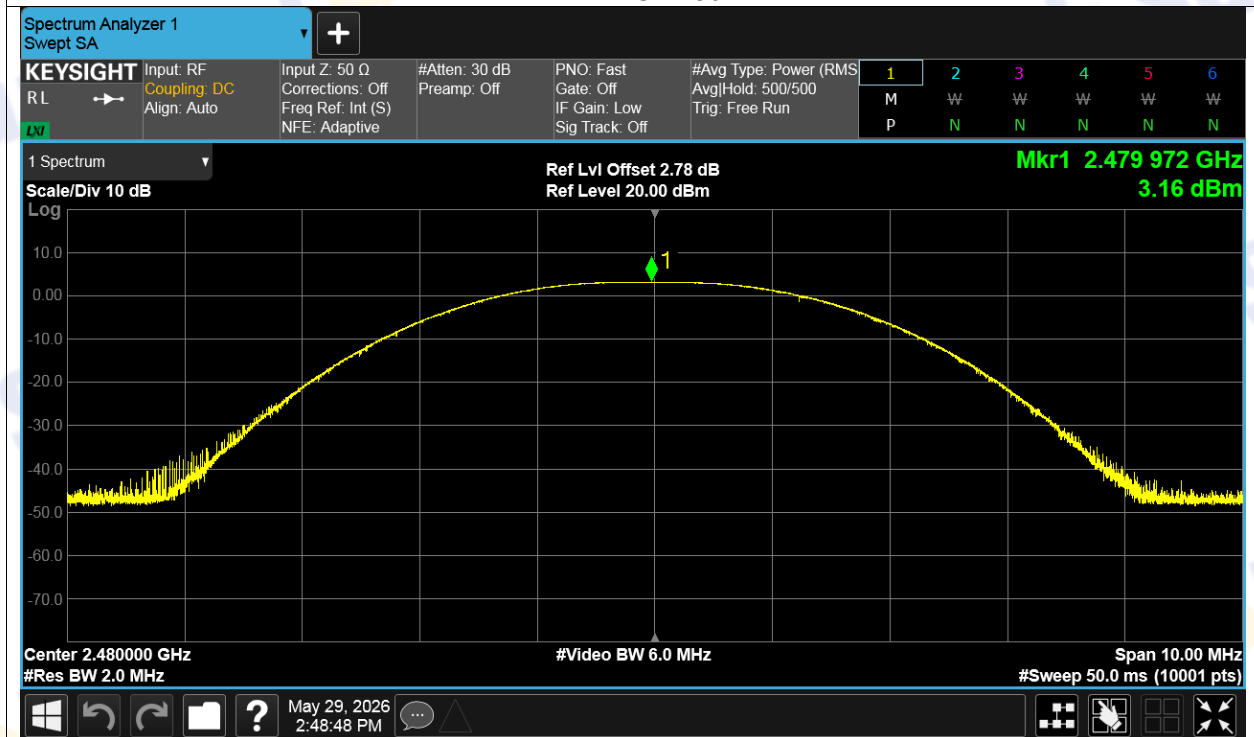
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	2.4g	2402	Ant1	3.14	0	3.14	30	Pass
NVNT	2.4g	2441	Ant1	3.27	0	3.27	30	Pass
NVNT	2.4g	2480	Ant1	3.16	0	3.16	30	Pass

5.6. Original test data





Power NVNT 2.4G 2480MHz Ant1



6. Power Spectral Density

6.1. General Information

Test date	May. 29, 2026	Test engineer	Jimmy Qu	
Climate condition	Ambient temperature	21.5℃	Relative humidity	67.5%
	Atmospheric pressure	101.51kPa		
Test place	EMC Room 1#			

6.2. Block diagram of test setup

Same with 4.1

6.3. Limits

FCC Part15 (15.247), Subpart C			
Section	Test Item	Limit	Frequency Range (MHz)
FCC Part 15.247 (e)	Power Spectral Density	8 dBm/3 kHz	2400-2483.5

6.4. Test procedure

(1) Connect EUT's antenna output to spectrum analyzer by RF cable.

(2) Set the spectrum analyzer as follows:

Center frequency	DTS Channel center frequency
RBW:	$3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$
VBW:	$\geq 3\text{RBW}$
Span	1.5 times the DTS bandwidth
Detector Mode:	Peak
Sweep time:	auto
Trace mode	Max hold

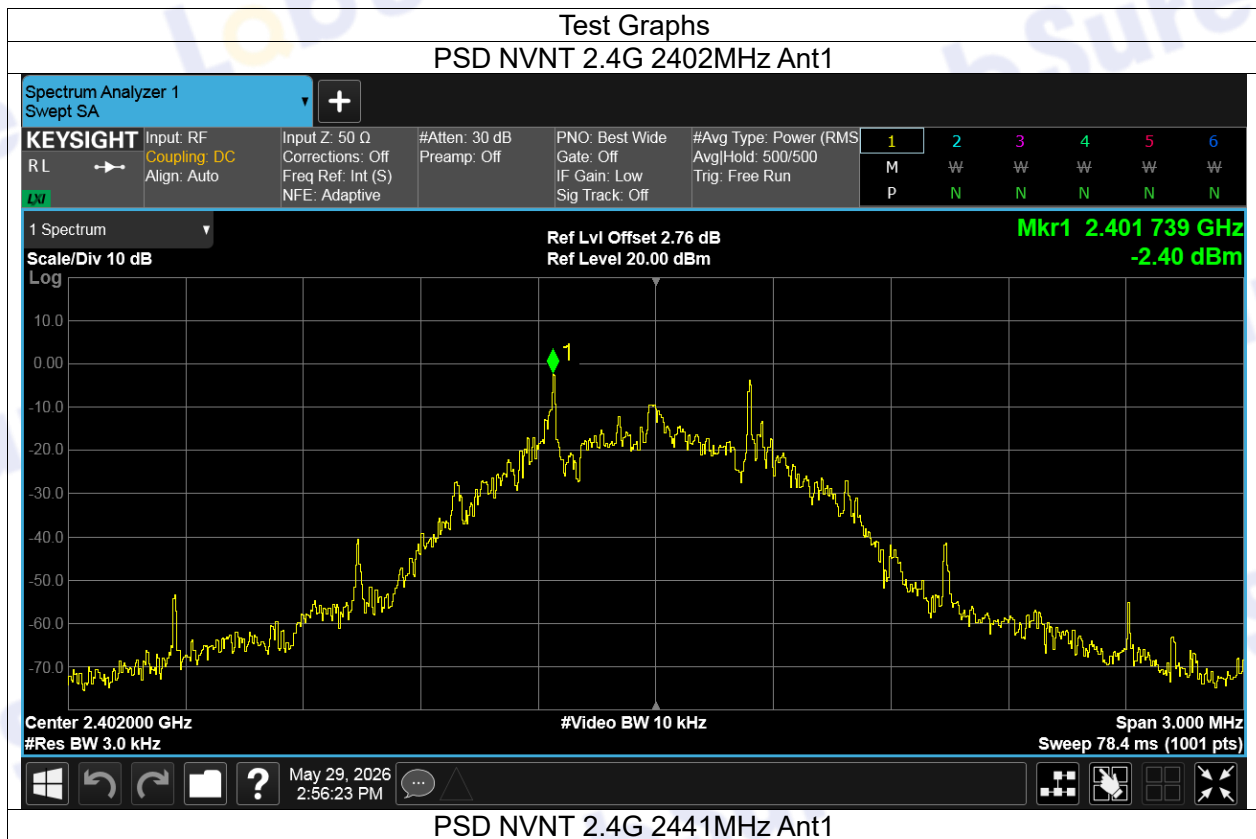
(3) Allow the trace to stabilize, use the peak marker function to determine the maximum amplitude level within the RBW.

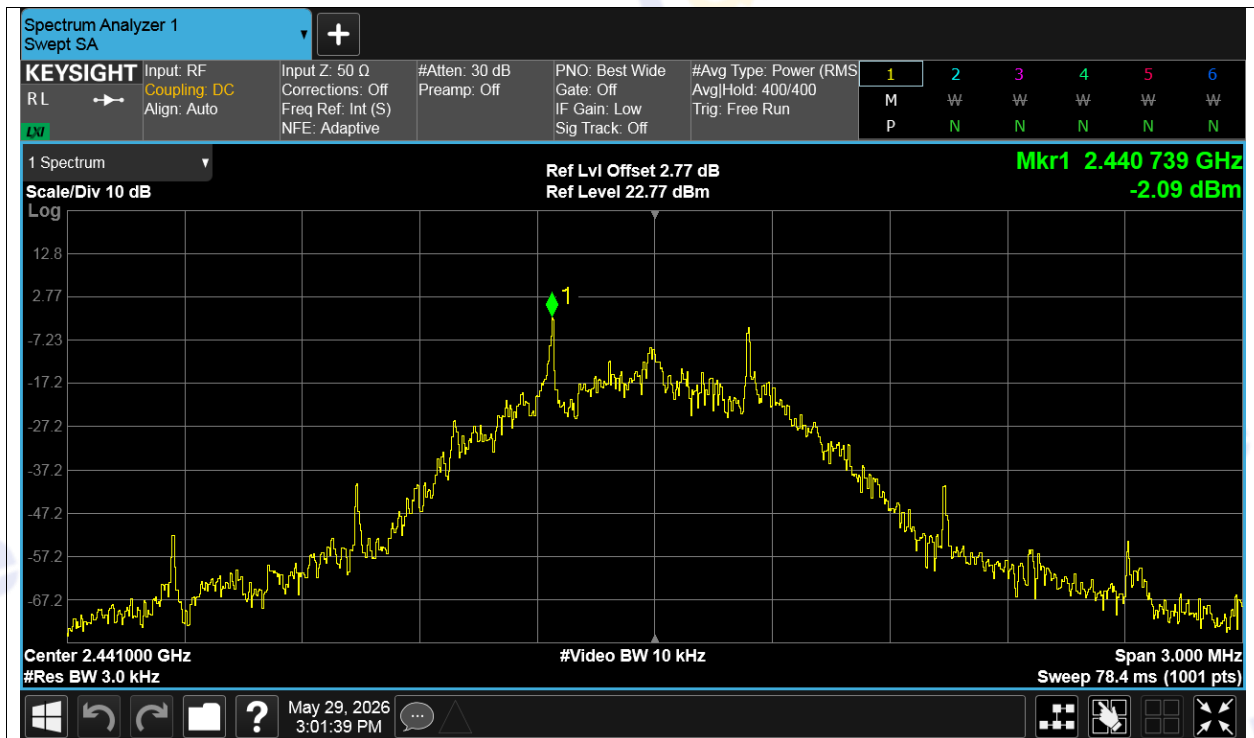
(4) If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

6.5. Test result

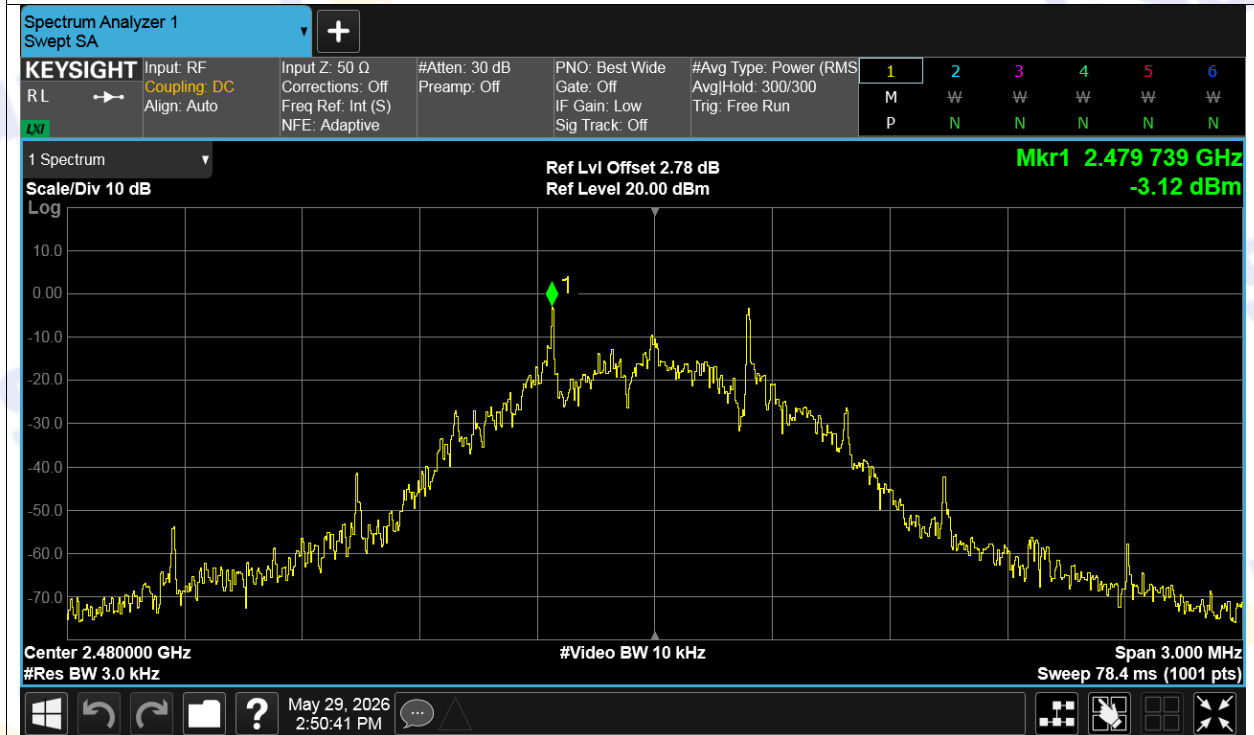
Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm)	Duty Factor (dB)	Total PSD (dBm)	Limit (dBm)	Verdict
NVNT	2.4g	2402	Ant1	-2.40	0	-2.4	8	Pass
NVNT	2.4g	2441	Ant1	-2.09	0	-2.09	8	Pass
NVNT	2.4g	2480	Ant1	-3.12	0	-3.12	8	Pass

6.6. Original test data





PSD NVNT 2.4G 2480MHz Ant1



7. Band Edge Compliance (Conducted Method)

7.1. General Information

Test date	May. 29, 2026	Test engineer	Jimmy Qu	
Climate condition	Ambient temperature	21.5℃	Relative humidity	67.5%
	Atmospheric pressure	101.51kPa		
Test place	EMC Room 1#			

7.2. Block diagram of test setup

Same with 4.1

7.3. Limits

FCC Part15 (15.247), Subpart C		
Section	Test Item	Limit
FCC §15.247 (d)	Conducted Bandedge	In any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

7.4. Test procedure

(1) Connect EUT's antenna output to spectrum analyzer by RF cable.

(2) Set the spectrum analyzer as follows:

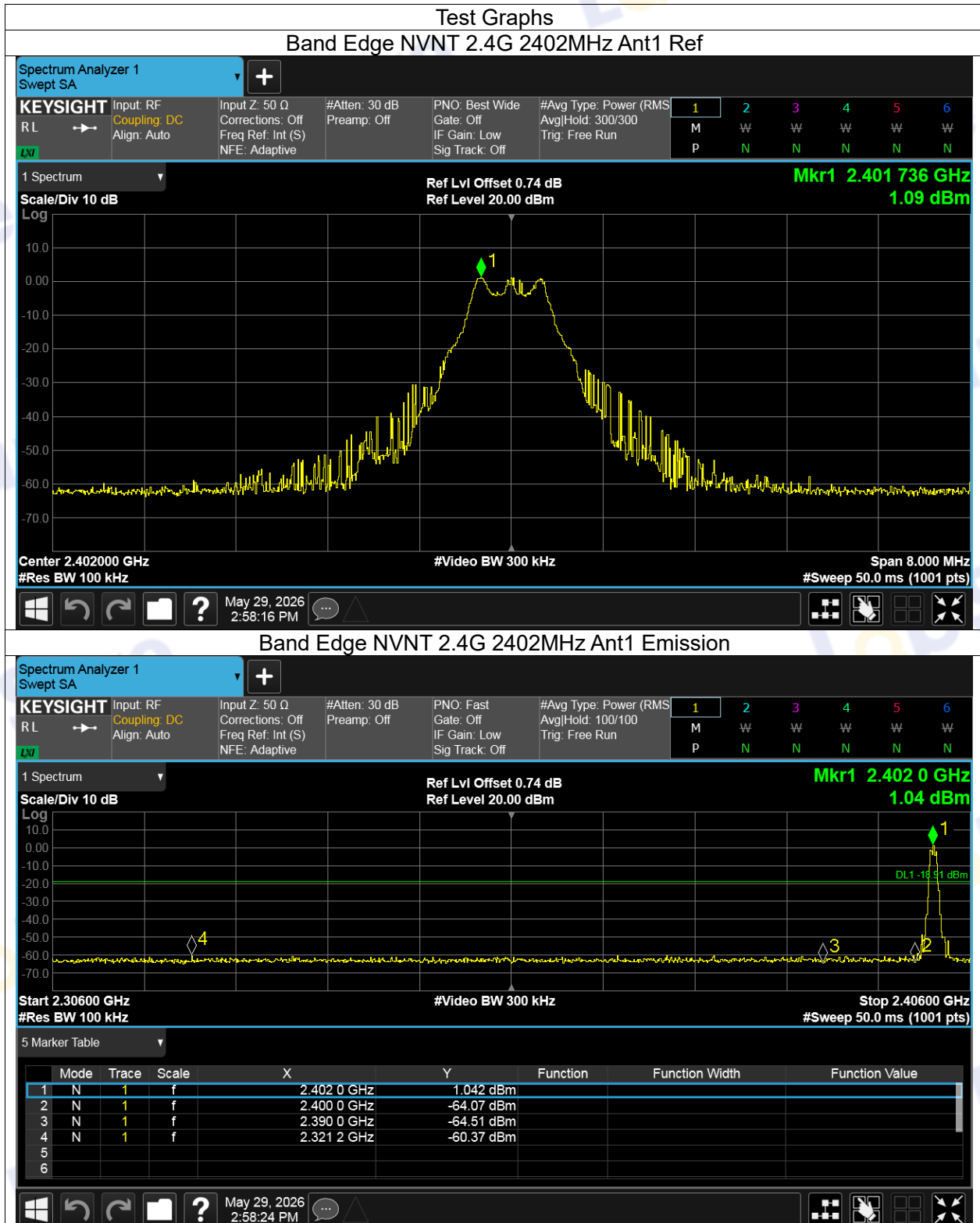
RBW:	100 kHz
VBW:	300 kHz
Span	Encompass frequency range to be measured
Number of measurement points	$\geq \text{span/RBW}$
Detector Mode:	Peak
Sweep time:	auto
Trace mode	Max hold

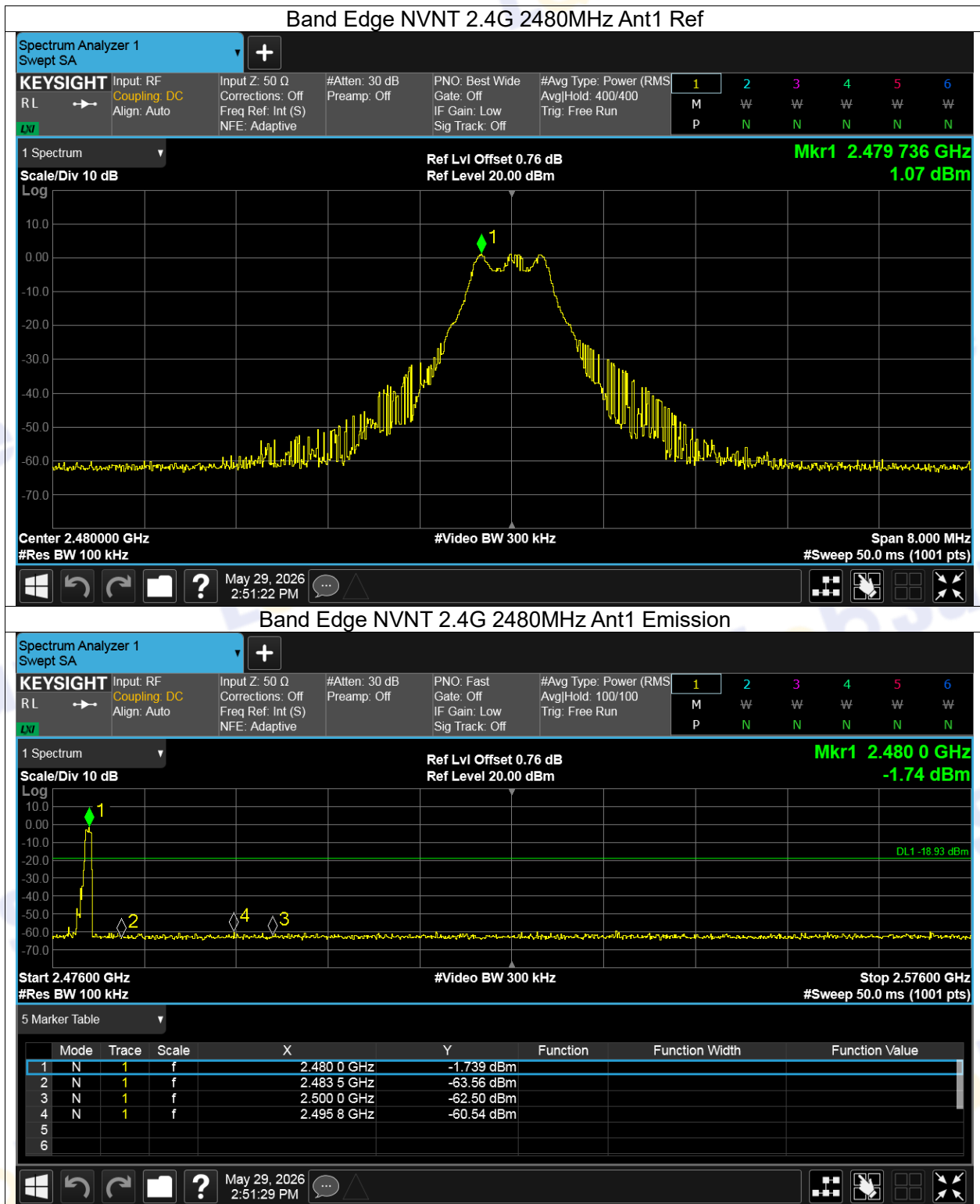
(3) Allow the trace to stabilize, use the peak marker function to determine the maximum amplitude of all unwanted emissions outside of the authorized frequency band

7.5. Test result

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	2.4g	2402	Ant1	-61.46	-20	Pass
NVNT	2.4g	2480	Ant1	-61.61	-20	Pass

7.6. Original test data





8. RF Conducted Spurious Emissions

8.1. General Information

Test date	May. 29, 2026	Test engineer	Jimmy Qu	
Climate condition	Ambient temperature	21.5℃	Relative humidity	67.5%
	Atmospheric pressure	101.51kPa		
Test place	EMC Room 1#			

8.2. Block diagram of test setup

Same as section 4.1

8.3. Limits

FCC Part15 (15.247), Subpart C		
Section	Test Item	Limit
FCC Part 15.247 (d)	Conducted Spurious Emissions	In any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

In any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

8.4. Test procedure

(1) Connect EUT's antenna output to spectrum analyzer by RF cable.

(2) Establish a reference level by using the following procedure:

Center frequency	Test frequency
RBW:	100 kHz
VBW:	300 kHz
Span	Wide enough to capture the peak level of the in-band emission
Detector Mode:	Peak

Sweep time: auto

Trace mode Max hold

(3) Allow the trace to stabilize, use the peak marker function to determine the maximum peak power level to establish the reference level.

(4) Set the spectrum analyzer as follows:

RBW: 100 kHz

VBW: 300 kHz

Span Encompass frequency range to be measured

Number of measurement points $\geq \text{span/RBW}$

Detector Mode: Peak

Sweep time: auto

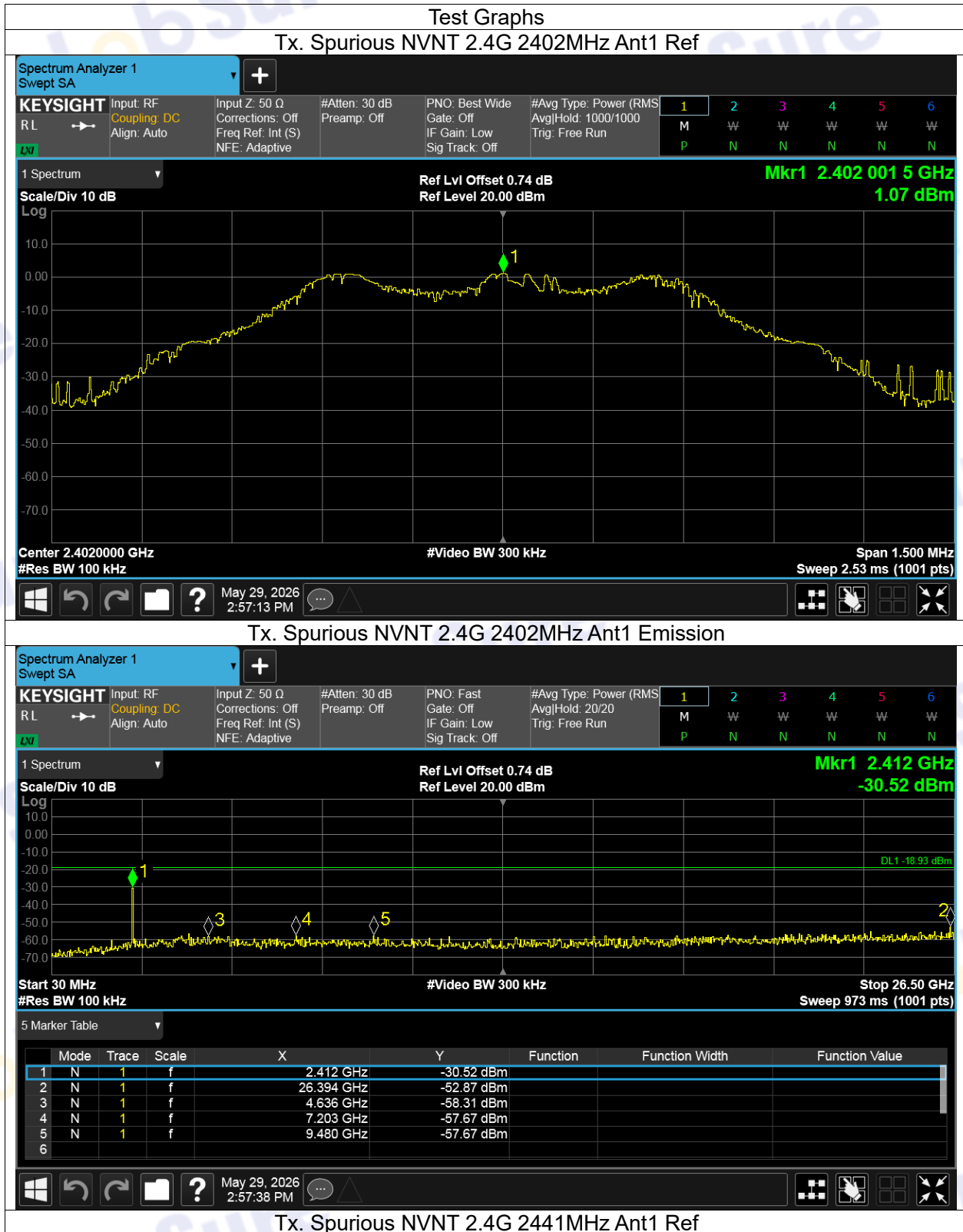
Trace mode Max hold

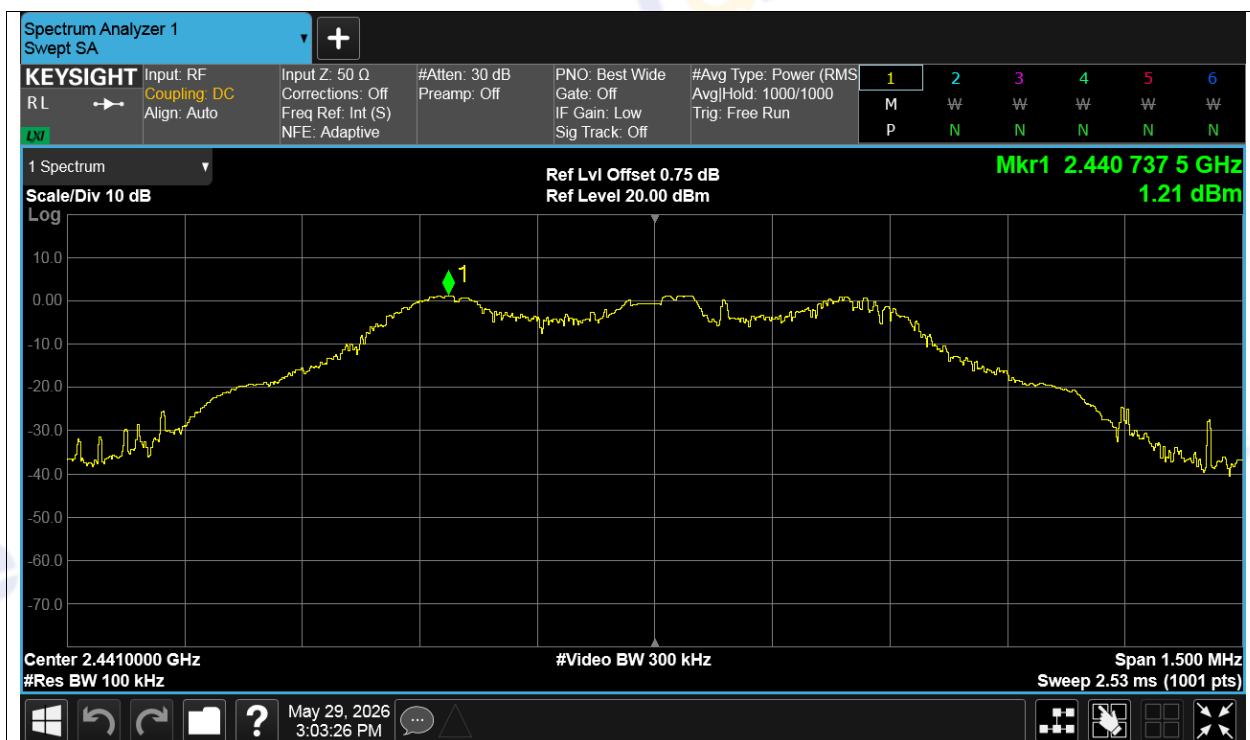
(5) Allow the trace to stabilize, use the peak marker function to determine the maximum amplitude of all unwanted emissions outside of the authorized frequency band

8.5. Test result

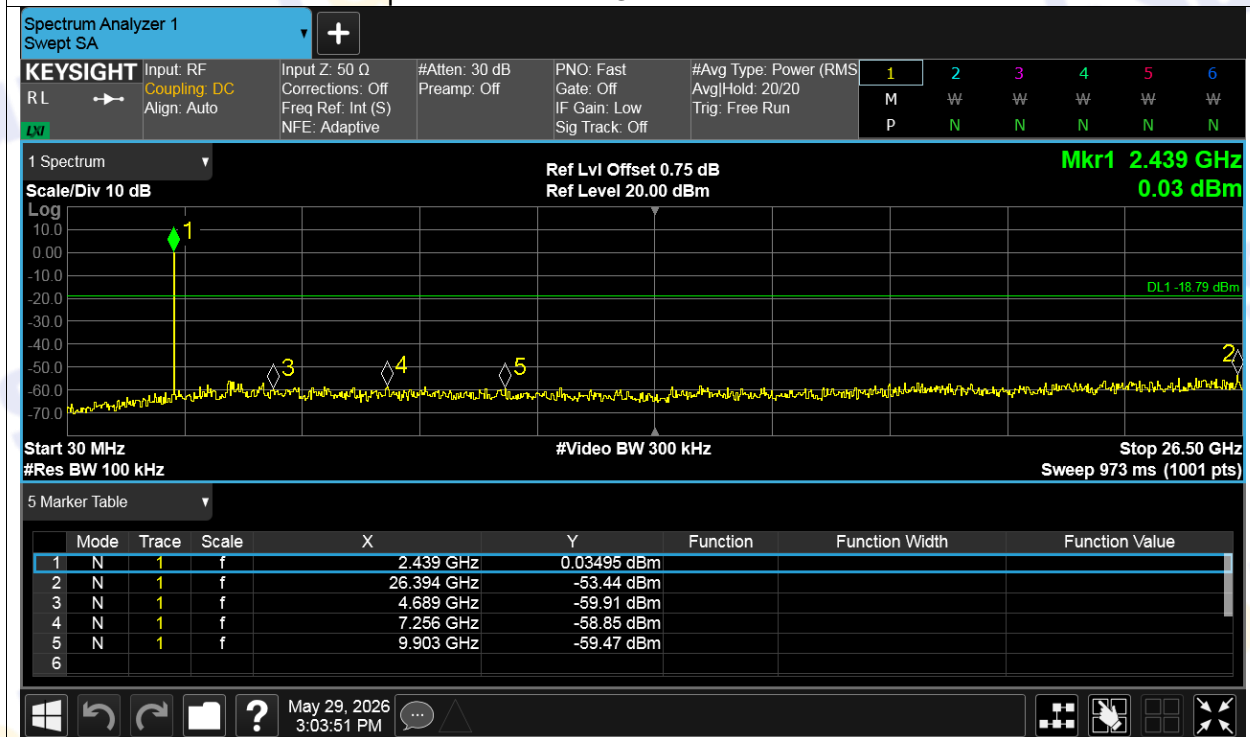
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	2.4g	2402	Ant1	-53.94	-20	Pass
NVNT	2.4g	2441	Ant1	-54.65	-20	Pass
NVNT	2.4g	2480	Ant1	-55.92	-20	Pass

8.6. Original test data





Tx. Spurious NVNT 2.4G 2441MHz Ant1 Emission



Tx. Spurious NVNT 2.4G 2480MHz Ant1 Ref



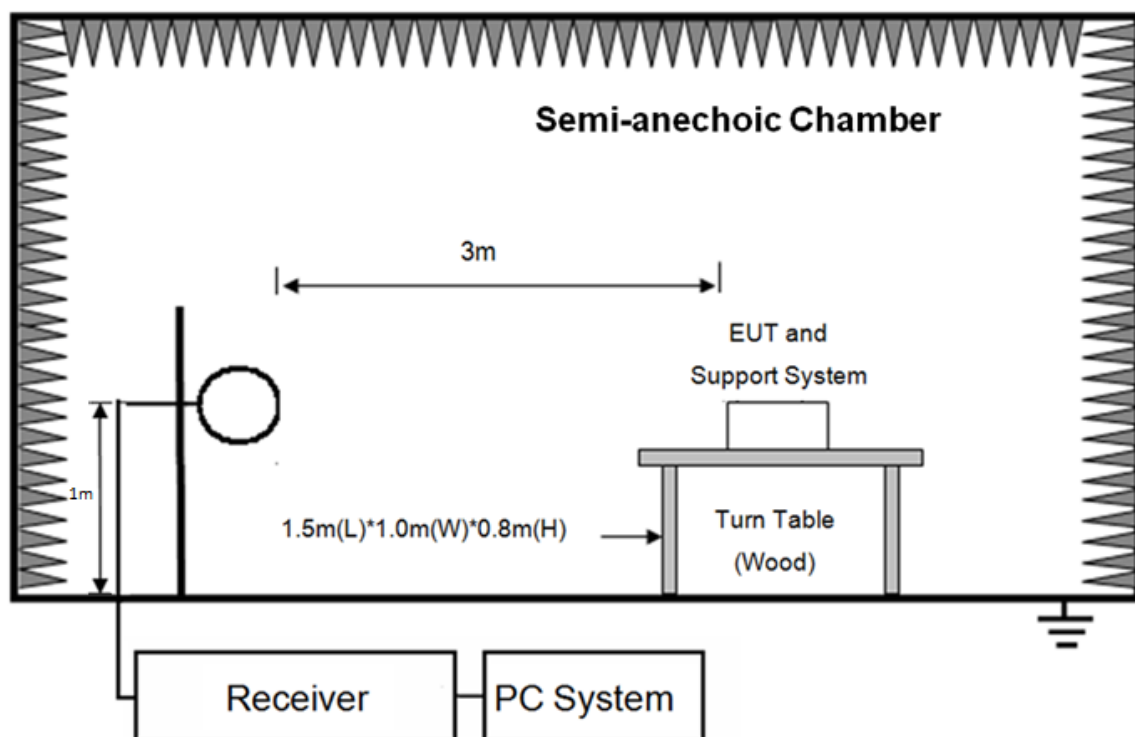
9. Radiated Emission

9.1. General Information

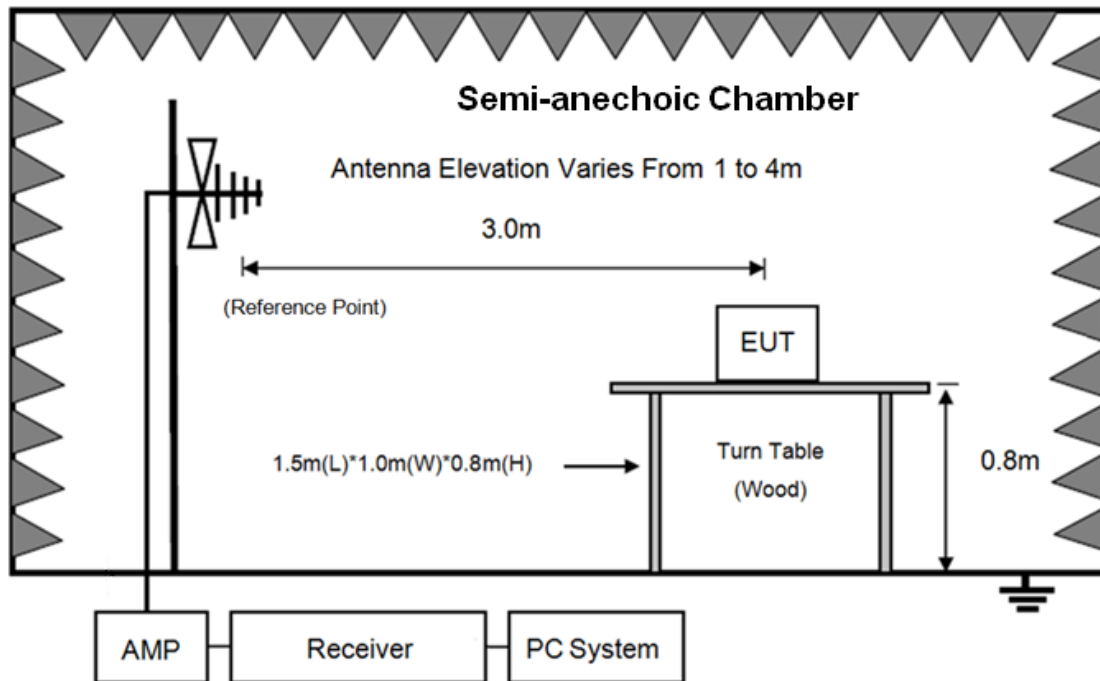
Test date	May. 27, 2026 ~ May. 31, 2026	Test engineer	Cheney Qu	
Climate condition	Ambient temperature	24.6°C	Relative humidity	48.7%
	Atmospheric pressure	101.2kPa		
Test place	EMC Room 1#			

9.2. Block diagram of test setup

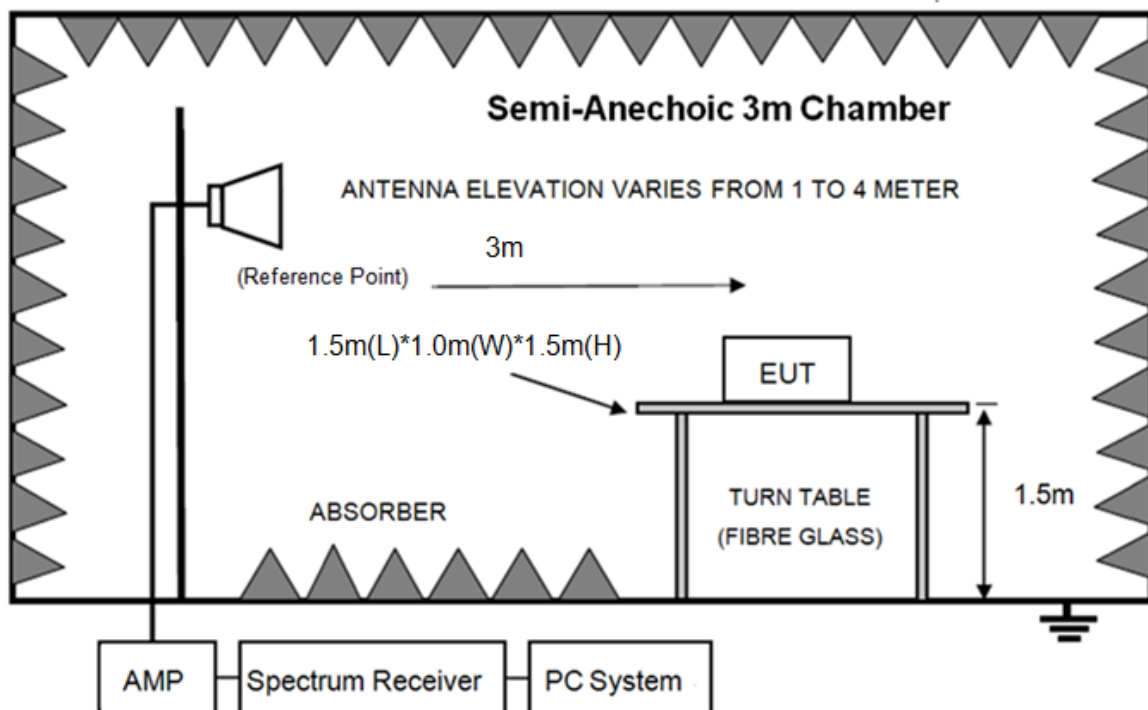
In 3 m Anechoic Chamber, test setup diagram for 9 kHz - 30 MHz:



In 3 m Anechoic Chamber, test setup diagram for 30 MHz - 1 GHz:



In 3 m Anechoic Chamber, test setup diagram for frequency above 1 GHz:



Note: For harmonic emissions test an appropriate high pass filter was inserted in the input port of AMP.

9.3. Limit

8.2.1 FCC 15.205 Restricted frequency band

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
10.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.1772&4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.2072&4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(²)
13.36-13.41			

¹Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

²Above 38.6

9.4. Test Procedure

- (1) EUT was placed on a non-metallic table, 10 mm above the ground plane inside a semi-anechoic chamber for below 1 GHz and 150 cm above the ground plane inside a semi-anechoic chamber for above 1 GHz.
- (2) Test antenna was located 3 m from the EUT on an adjustable mast, and the antenna used as below table.

Test frequency range	Test antenna used	Test antenna distance
9 kHz - 30 MHz	Active Loop antenna	3 m
30 MHz - 1 GHz	Trilog Broadband Antenna	3 m
1 GHz - 18 GHz	Double Ridged Horn Antenna (1 GHz - 18 GHz)	3 m
18 GHz - 40 GHz	Horn Antenna (18 GHz - 40 GHz)	3 m

According ANSI C63.10:2020+CORR.1:2023 clause 6.4.4.2 and 6.5.3, for measurements below 30 MHz, the loop antenna was positioned with its plane vertical from the EUT and rotated about its vertical axis for maximum response at each azimuth position around the EUT. And the loop antenna also is positioned with its plane horizontal at the specified distance from the EUT. The center of the loop is 1 m above the ground. For measurement above 30 MHz, the Trilog Broadband Antenna or Horn Antenna was located 3 m from EUT, Measurements were made with the antenna positioned in both the horizontal and vertical planes of Polarization, and the

measurement antenna was varied from 1 m to 4 m. in height above the reference ground plane to obtain the maximum signal strength.

(3) Below pre-scan procedure was first performed in order to find prominent frequency spectrum radiated emissions from 9 kHz to 25 GHz:

(a) Scanning the peak frequency spectrum with the antenna specified in step (3), and the EUT was rotated 360 degree, the antenna height was varied from 1 m to 4 m (Except loop antenna, it's fixed 1 m above ground.)

(b) Change work frequency or channel of device if practicable.

(c) Change modulation type of device if practicable.

(d) Change power supply range from 85% to 115% of the rated supply voltage

(e) Rotated EUT though three orthogonal axes to determine the attitude of EUT arrangement produces highest emissions.

Spectrum frequency from 9 kHz to 25 GHz (tenth harmonic of fundamental frequency) was investigated, and no any obvious emission were detected from 9 kHz to 30 MHz and 18 GHz to 25 GHz, so below final test was performed with frequency range from 30 MHz to 18 GHz.

(4) For final emissions measurements at each frequency of interest, the EUT was rotated and the antenna height was varied between 1 m and 4 m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 on Radiated Emission test.

(5) The emissions from 9 kHz to 1 GHz were measured based on CISPR QP detector except for the frequency bands 9 - 90 kHz, 110 - 490 kHz, for emissions from 9 kHz - 90 kHz, 110 kHz - 490 kHz and above 1 GHz were measured based on average detector, for emissions above 1 GHz, peak emissions also be measured and need comply with Peak limit.

(6) The emissions from 9 kHz to 1 GHz, QP or average values were measured with EMI receiver with below RBW

Frequency band	RBW
9 kHz - 150 kHz	200 Hz
150 kHz - 30 MHz	9 kHz
30 MHz - 1 GHz	120 kHz

(7) For emissions above 1 GHz, both Peak and Average level were measured with Spectrum Analyzer, and the RBW is set at 1 MHz, VBW is set at 3 MHz for Peak measure; According ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 clause 4.1.4.2.2 procedure for average measure.

(8) X axis, Y axis, Z axis are tested, and worse setup X axis is reported.

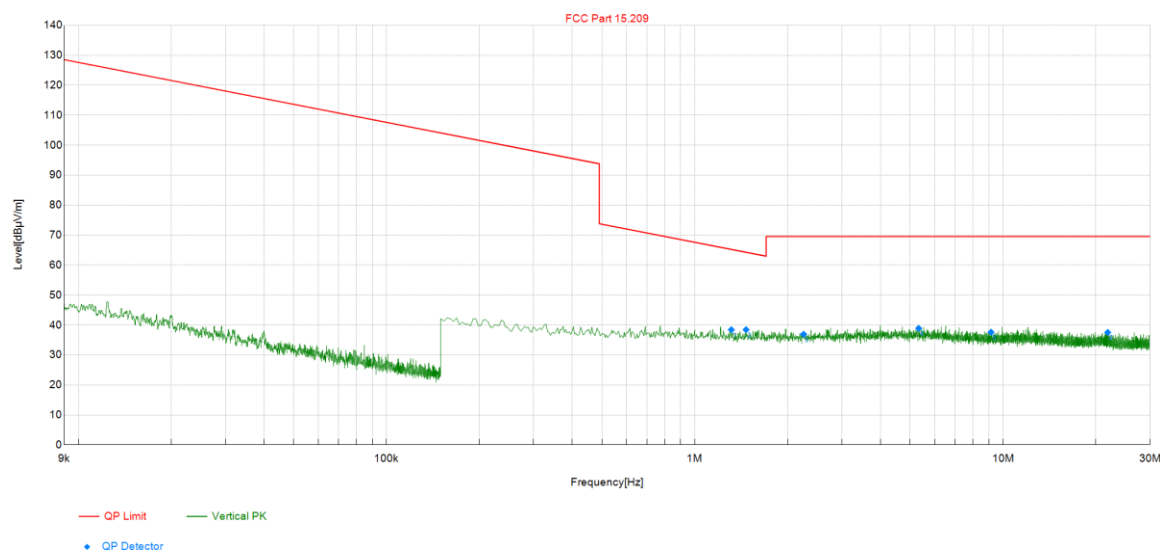
9.5. Test result

Pass. (See below detailed test result)

All the emissions except fundamental emission from 9 kHz to 25 GHz were comply with 15.209 limit.

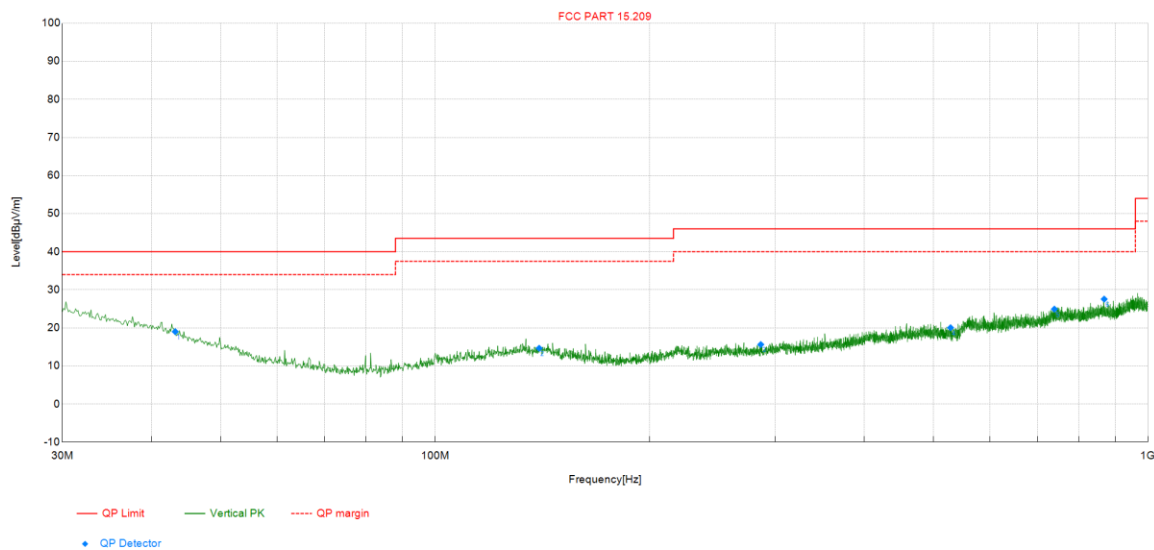
Note1: For emissions 9KHz to 30 MHz and 18 GHz to 26 GHz, according exploratory explorer test, when change Tx mode and channel, have no distinct influence on emissions level, so for emissions 9KHz to 30 MHz and 18 GHz to 26 GHz, the final test was only performed with EUT working in the worst case 1Mbps, Tx 2402 MHz mode.

Note2: For emissions above 1 GHz. If peak results comply with AV limit, AV Result is deemed to comply with AV limit.

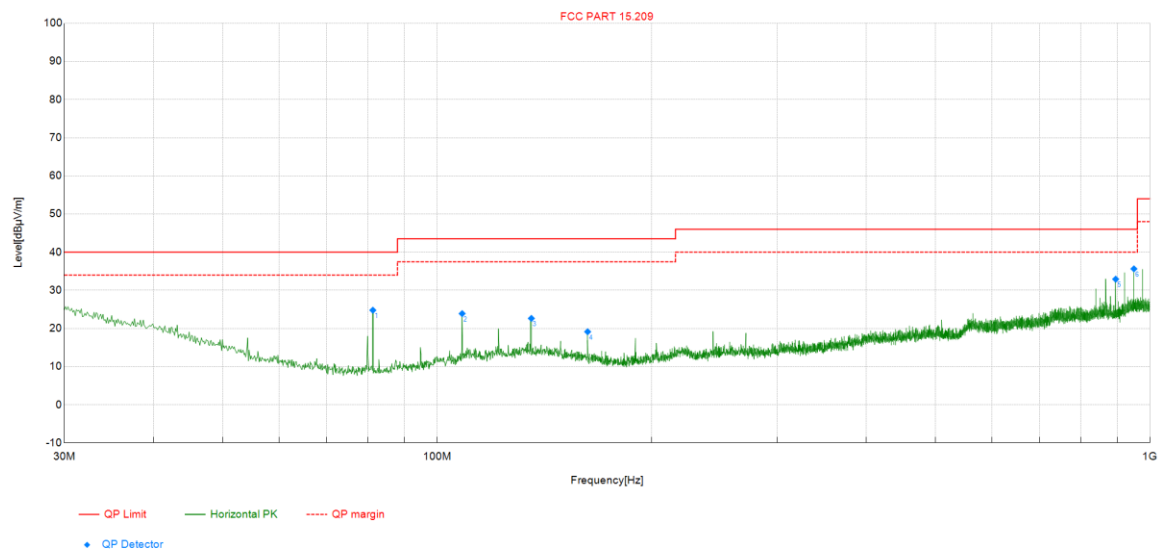
Radiated Emission test (9Khz-30MHz)

NO.	Frequency [MHz]	Factor [dB/m]	QP Reading [dBμV]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Pol	Verdict
1	1.31	20.06	18.38	38.44	65.23	26.79	V	PASS
2	1.47	20.06	18.38	38.44	64.28	25.84	V	PASS
3	2.25	20.10	16.83	36.93	69.54	32.61	V	PASS
4	5.33	20.33	18.56	38.89	69.54	30.65	V	PASS
5	9.15	20.22	17.4	37.62	69.54	31.92	V	PASS
6	21.86	20.14	17.39	37.53	69.54	32.01	V	PASS

Radiated Emission test (30MHz-1GHz)



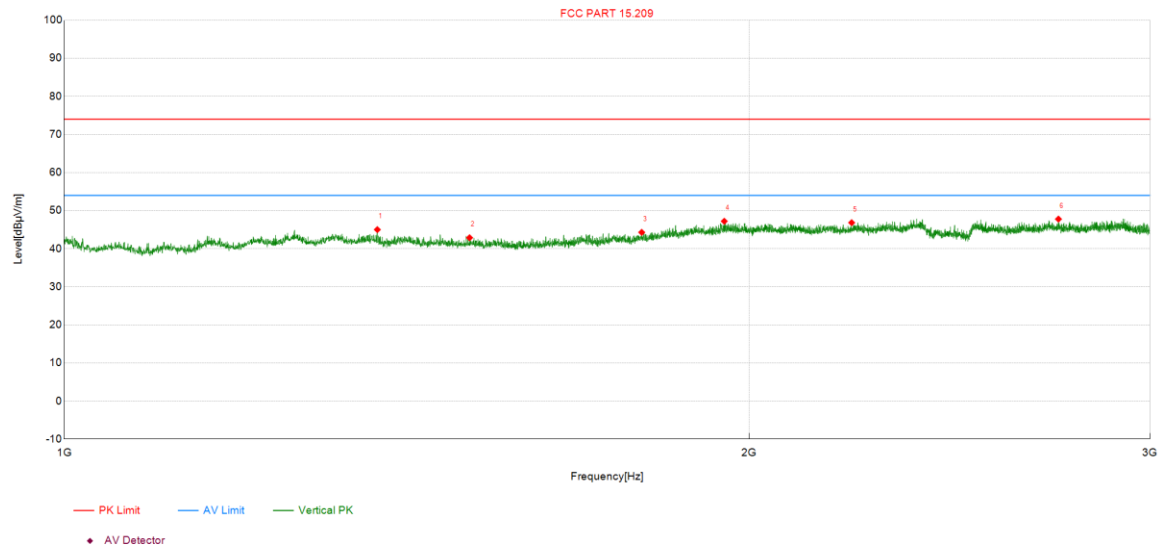
NO.	Frequency [MHz]	Factor [dB/m]	QP Reading [dBμV]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin[dB]	Pol	Verdict
1	43.22	-18.35	37.37	19.02	40.00	20.98	V	PASS
2	139.97	-22.06	36.72	14.66	43.50	28.84	V	PASS
3	286.32	-21.09	36.73	15.64	46.00	30.36	V	PASS
4	528.46	-15.19	35.24	20.05	46.00	25.95	V	PASS
5	739.07	-9.84	34.77	24.93	46.00	21.07	V	PASS
6	867.96	-8.14	35.7	27.56	46.00	18.44	V	PASS



NO.	Frequency [MHz]	Factor [dB/m]	QP Reading [dBμV]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Pol	Verdict
1	81.29	-27.61	52.4	24.79	40.00	15.21	H	PASS
2	108.45	-24.11	48.01	23.90	43.50	19.60	H	PASS
3	135.61	-22.10	44.75	22.65	43.50	20.85	H	PASS
4	162.65	-23.22	42.37	19.15	43.50	24.35	H	PASS
5	895.00	-8.39	41.32	32.93	46.00	13.07	H	PASS
6	949.32	-6.44	42.07	35.63	46.00	10.37	H	PASS

Radiated Emission test (1GHz-3GHz)

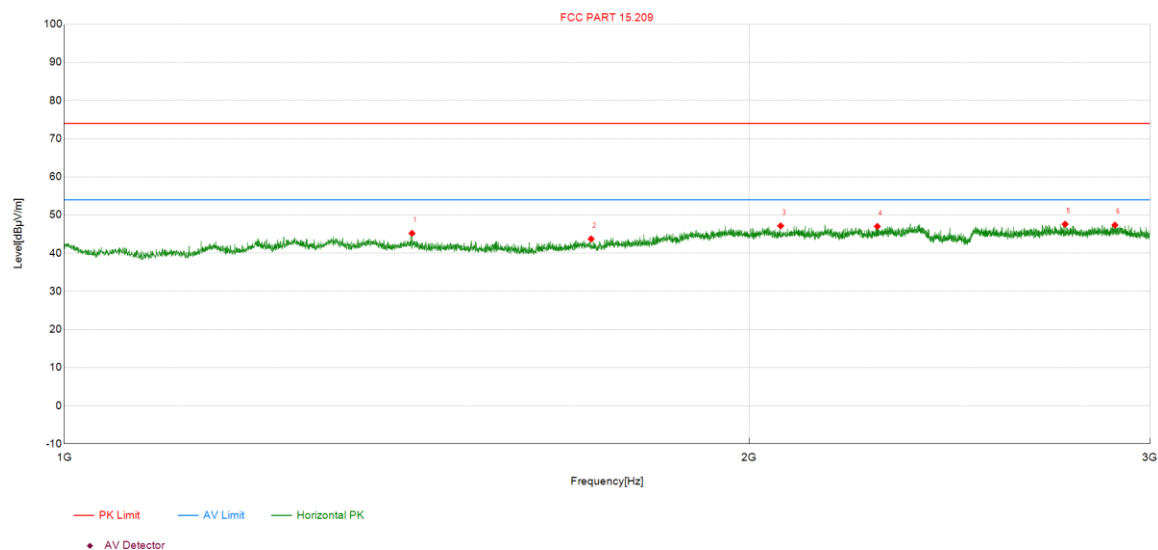
Mode	Test channel	Ant. Pol.
2.4Gbps	2402MHz	Vertical



NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	1372.75	58.30	45.02	-13.28	74.00	28.98	PK	V	PASS
2	1507.00	57.09	42.88	-14.21	74.00	31.12	PK	V	PASS
3	1793.75	56.76	44.30	-12.46	74.00	29.70	PK	V	PASS
4	1950.00	57.31	47.22	-10.09	74.00	26.78	PK	V	PASS
5	2218.25	56.36	46.84	-9.52	74.00	27.16	PK	V	PASS
6	2734.50	56.17	47.78	-8.39	74.00	26.22	PK	V	PASS

Note: If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

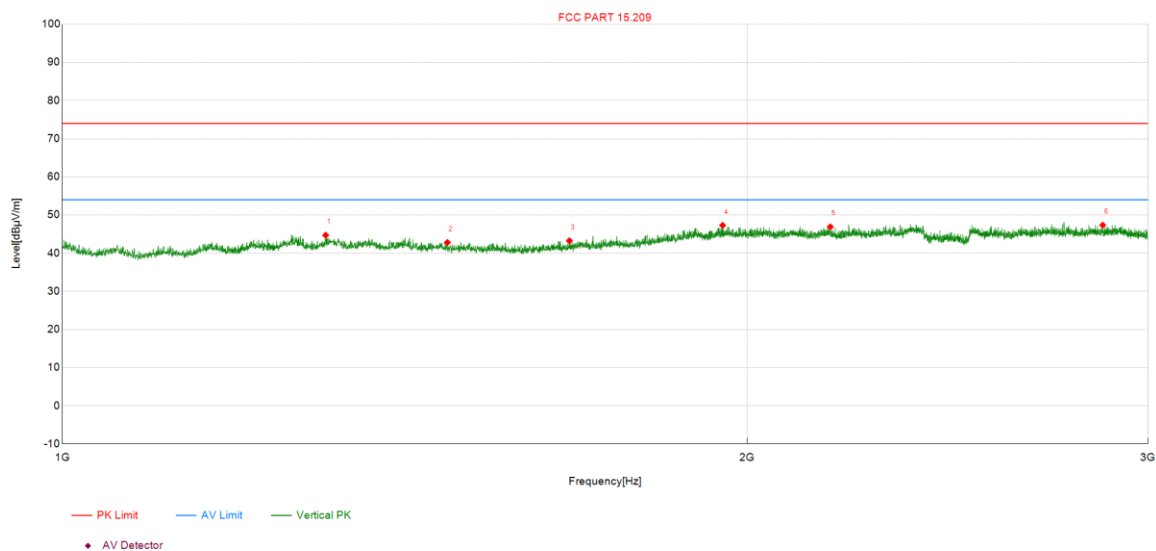
Mode	Test channel	Ant. Pol.
2.4Gbps	2402MHz	Horizontal



NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	1421.75	58.88	45.20	-13.68	74.00	28.80	PK	H	PASS
2	1704.25	57.01	43.73	-13.28	74.00	30.27	PK	H	PASS
3	2064.50	56.92	47.16	-9.76	74.00	26.84	PK	H	PASS
4	2276.50	56.26	47.02	-9.24	74.00	26.98	PK	H	PASS
5	2753.00	56.00	47.61	-8.39	74.00	26.39	PK	H	PASS
6	2895.25	55.21	47.36	-7.85	74.00	26.64	PK	H	PASS

Note: If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

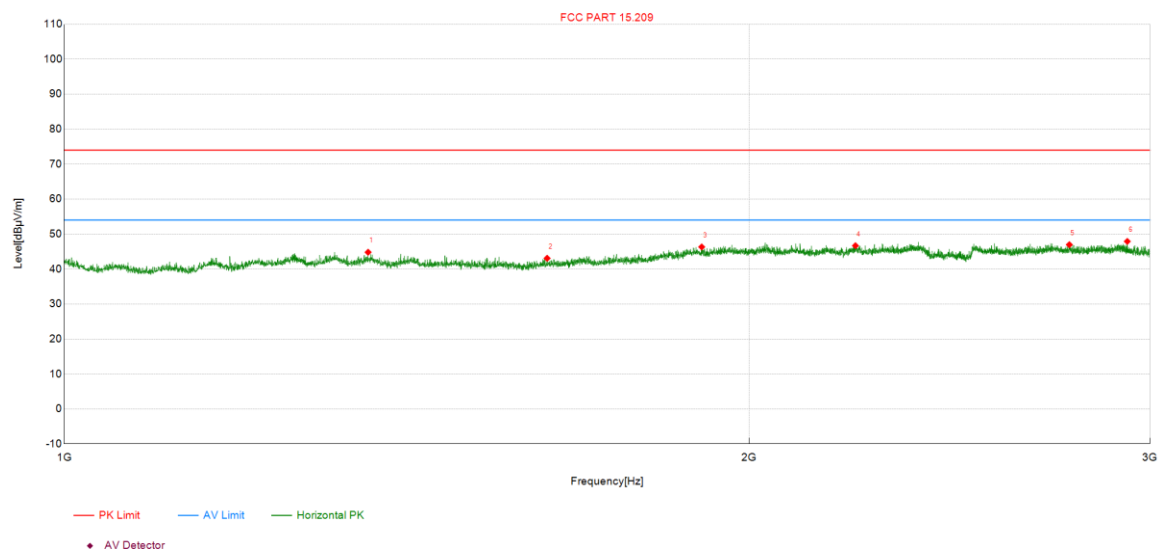
Mode	Test channel	Ant. Pol.
2.4Gbps	2441MHz	Vertical



NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	1305.50	57.53	44.71	-12.82	74.00	29.29	PK	V	PASS
2	1476.50	56.89	42.81	-14.08	74.00	31.19	PK	V	PASS
3	1670.50	56.91	43.27	-13.64	74.00	30.73	PK	V	PASS
4	1950.75	57.39	47.30	-10.09	74.00	26.70	PK	V	PASS
5	2175.25	56.57	46.91	-9.66	74.00	27.09	PK	V	PASS
6	2865.50	55.49	47.36	-8.13	74.00	26.64	PK	V	PASS

Note: If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

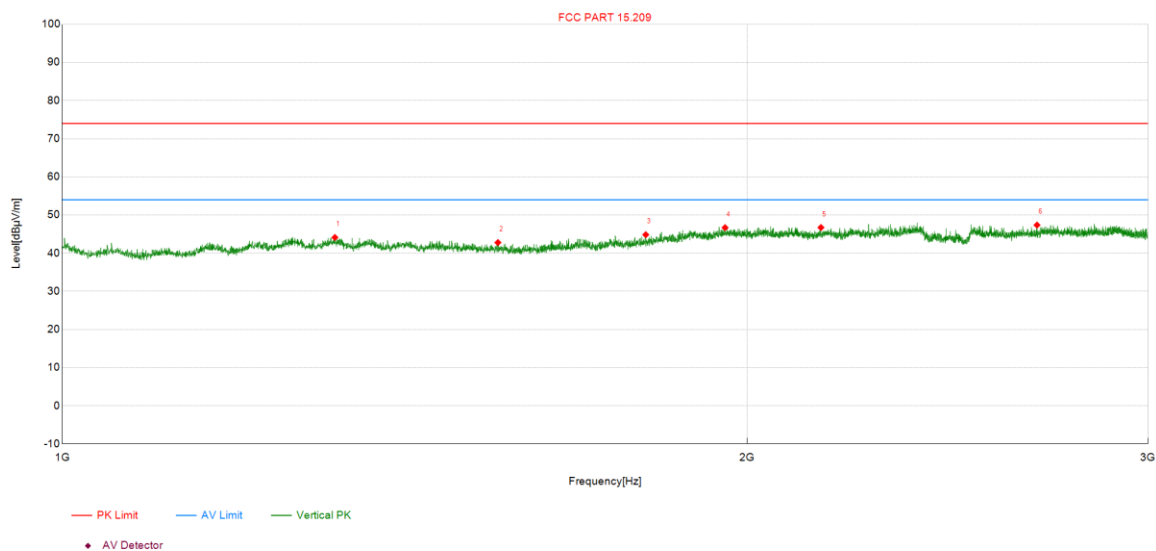
Mode	Test channel	Ant. Pol.
2.4Gbps	2441MHz	Horizontal



NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	1360.00	58.01	44.82	-13.19	74.00	29.18	PK	H	PASS
2	1630.00	57.26	43.09	-14.17	74.00	30.91	PK	H	PASS
3	1906.00	56.74	46.33	-10.41	74.00	27.67	PK	H	PASS
4	2226.75	56.15	46.68	-9.47	74.00	27.32	PK	H	PASS
5	2764.75	55.42	46.97	-8.45	74.00	27.03	PK	H	PASS
6	2931.75	56.04	47.92	-8.12	74.00	26.08	PK	H	PASS

Note: If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

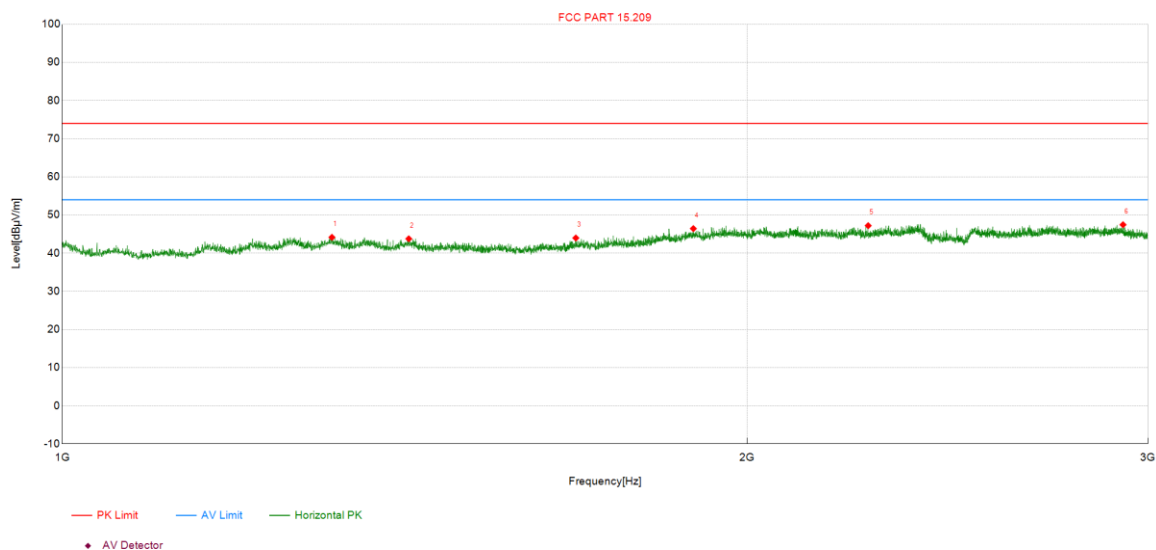
Mode	Test channel	Ant. Pol.
2.4Gbps	2480MHz	Vertical



NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	1317.75	57.02	44.12	-12.90	74.00	29.88	PK	V	PASS
2	1554.00	57.28	42.79	-14.49	74.00	31.21	PK	V	PASS
3	1804.75	57.10	44.84	-12.26	74.00	29.16	PK	V	PASS
4	1955.50	56.75	46.70	-10.05	74.00	27.30	PK	V	PASS
5	2154.75	56.42	46.72	-9.70	74.00	27.28	PK	V	PASS
6	2681.25	56.06	47.37	-8.69	74.00	26.63	PK	V	PASS

Note: If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

Mode	Test channel	Ant. Pol.
2.4Gbps	2480MHz	Horizontal

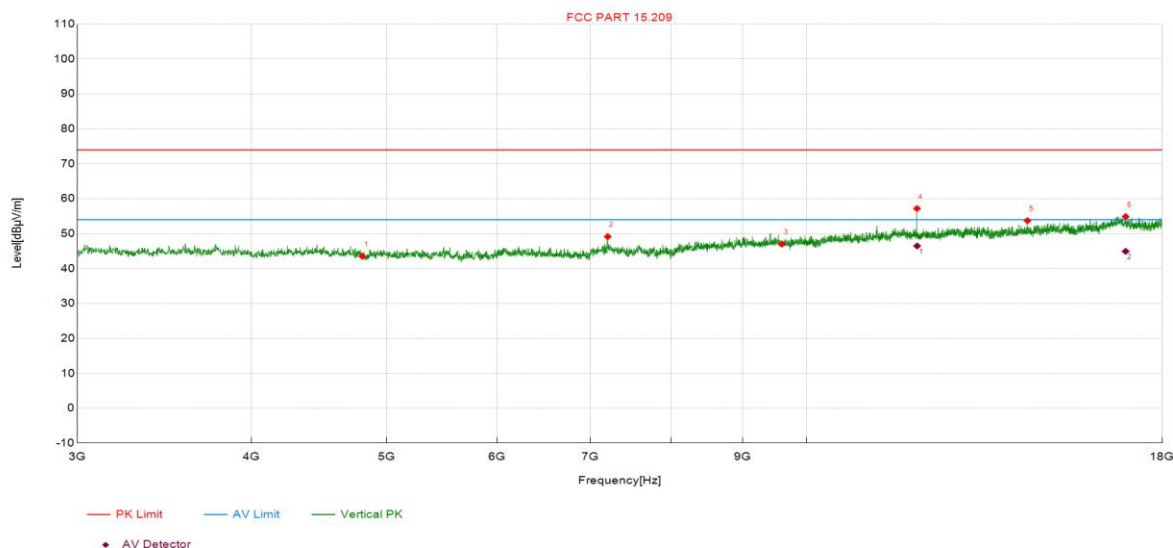


NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	1313.75	57.04	44.16	-12.88	74.00	29.84	PK	H	PASS
2	1420.00	57.44	43.77	-13.67	74.00	30.23	PK	H	PASS
3	1681.50	57.50	43.98	-13.52	74.00	30.02	PK	H	PASS
4	1893.75	57.00	46.44	-10.56	74.00	27.56	PK	H	PASS
5	2260.25	56.52	47.21	-9.31	74.00	26.79	PK	H	PASS
6	2925.00	55.51	47.46	-8.05	74.00	26.54	PK	H	PASS

Note: If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

Radiated Emission test (3GHz-18GHz)

Mode	Test channel	Ant. Pol.
2.4Gbps	2402MHz	Vertical

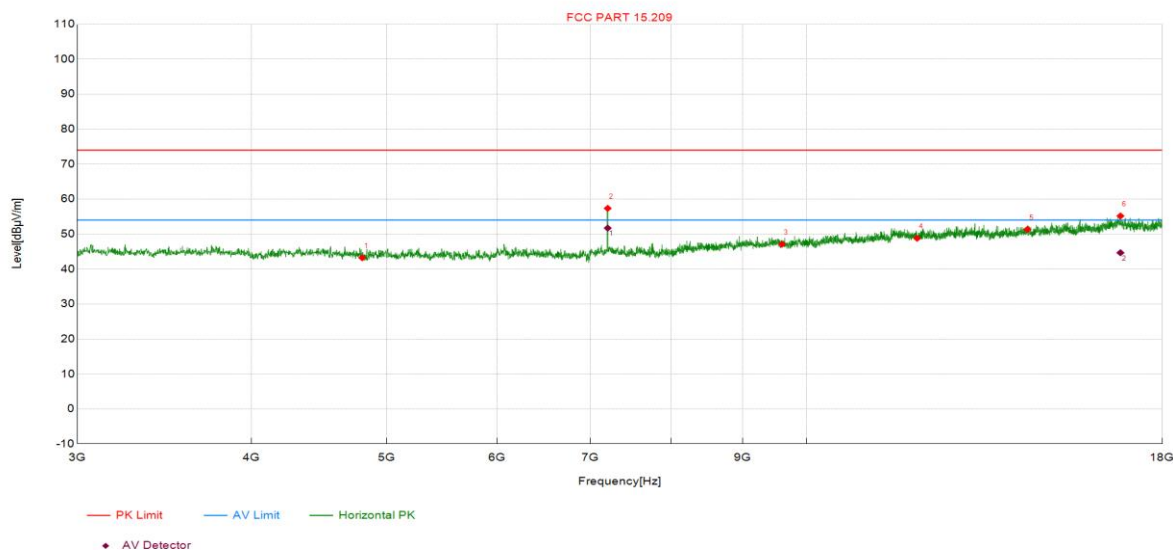


NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	4804.00	50.20	43.55	-6.65	74.00	30.45	PK	V	PASS
2	7205.63	52.98	49.16	-3.82	74.00	24.84	PK	V	PASS
3	9608.00	47.67	47.04	-0.63	74.00	26.96	PK	V	PASS
4	12009.38	54.19	57.21	3.02	74.00	16.79	PK	V	PASS
5	14412.00	48.24	53.72	5.48	74.00	20.28	PK	V	PASS
6	16950.00	45.65	54.89	9.24	74.00	19.11	PK	V	PASS

NO.	Frequency [MHz]	Factor [dB/m]	AV Reading [dBμV]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Pol	Verdict
1	12010.94	3.02	43.46	46.48	54.00	7.52	V	PASS
2	16950.00	9.24	35.71	44.95	54.00	9.05	V	PASS

Note: If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

Mode	Test channel	Ant. Pol.
2.4Gbps	2402MHz	Horizontal

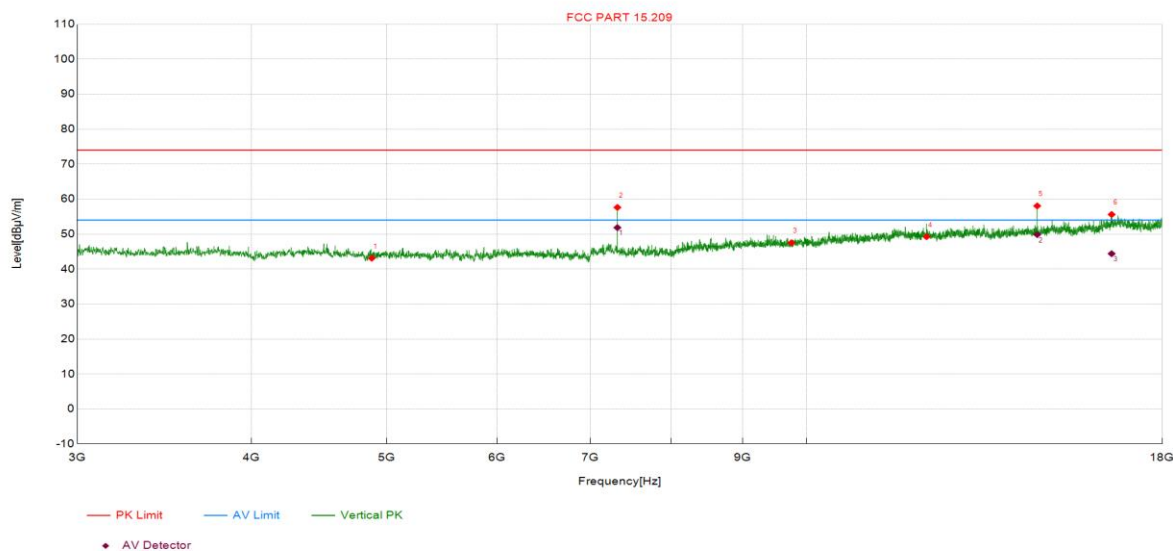


NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	4804.00	49.89	43.24	-6.65	74.00	30.76	PK	H	PASS
2	7205.63	61.19	57.37	-3.82	74.00	16.63	PK	H	PASS
3	9608.00	47.73	47.10	-0.63	74.00	26.90	PK	H	PASS
4	12010.00	45.80	48.81	3.01	74.00	25.19	PK	H	PASS
5	14412.00	45.86	51.34	5.48	74.00	22.66	PK	H	PASS
6	16805.63	45.70	55.18	9.48	74.00	18.82	PK	H	PASS

NO.	Frequency [MHz]	Factor [dB/m]	AV Reading [dBμV]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Pol	Verdict
1	7205.63	-3.82	55.54	51.72	54.00	2.28	H	PASS
2	16805.63	9.48	35.19	44.67	54.00	9.33	H	PASS

Note: If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

Mode	Test channel	Ant. Pol.
2.4Gbps	2441MHz	Vertical

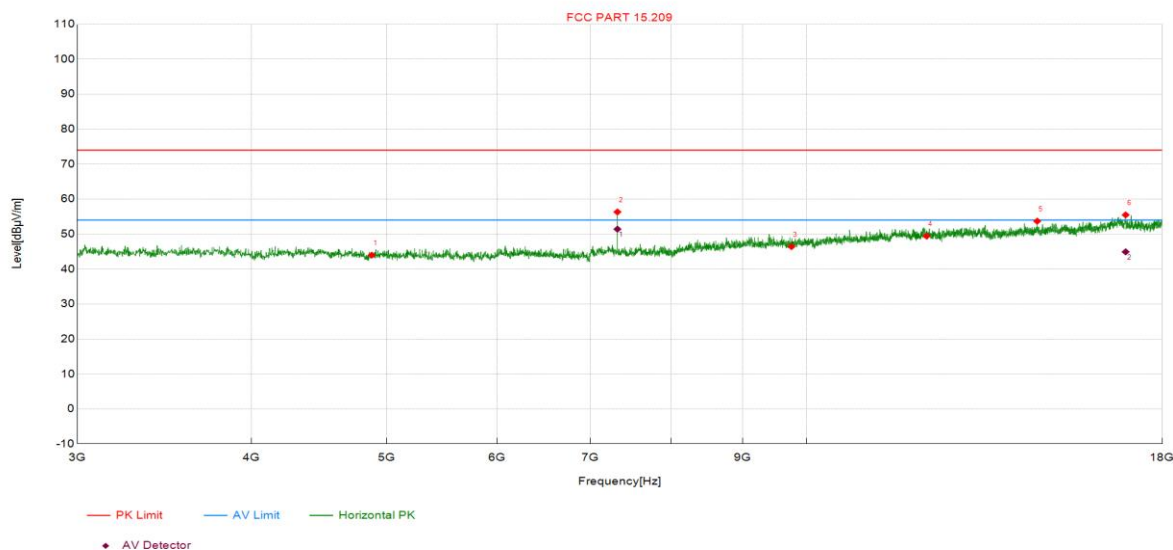


NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	4880.00	49.45	43.11	-6.34	74.00	30.89	PK	V	PASS
2	7321.88	61.46	57.62	-3.84	74.00	16.38	PK	V	PASS
3	9760.00	47.72	47.52	-0.20	74.00	26.48	PK	V	PASS
4	12200.00	45.93	49.24	3.31	74.00	24.76	PK	V	PASS
5	14645.63	51.90	58.06	6.16	74.00	15.94	PK	V	PASS
6	16561.88	46.54	55.61	9.07	74.00	18.39	PK	V	PASS

NO.	Frequency [MHz]	Factor [dB/m]	AV Reading [dBμV]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Pol	Verdict
1	7321.88	-3.84	55.69	51.85	54.00	2.15	V	PASS
2	14645.63	6.16	43.70	49.86	54.00	4.14	V	PASS
3	16561.88	9.07	35.33	44.40	54.00	9.60		

Note: If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

Mode	Test channel	Ant. Pol.
2.4Gbps	2441MHz	Horizontal

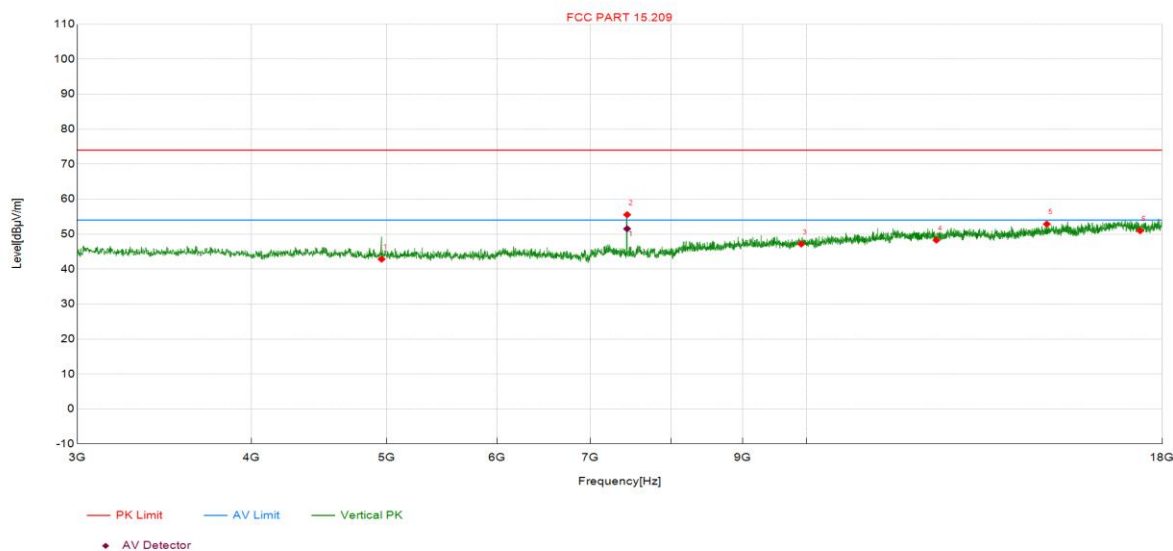


NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	4880.00	50.32	43.98	-6.34	74.00	30.02	PK	H	PASS
2	7321.88	60.17	56.33	-3.84	74.00	17.67	PK	H	PASS
3	9760.00	46.61	46.41	-0.20	74.00	27.59	PK	H	PASS
4	12200.00	46.13	49.44	3.31	74.00	24.56	PK	H	PASS
5	14645.63	47.54	53.70	6.16	74.00	20.30	PK	H	PASS
6	16950.00	46.25	55.49	9.24	74.00	18.51	PK	H	PASS

NO.	Frequency [MHz]	Factor [dB/m]	AV Reading [dBμV]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Pol	Verdict
1	7321.88	-3.84	55.26	51.42	54.00	2.58	H	PASS
2	16950.00	9.24	35.69	44.93	54.00	9.07	H	PASS

Note: If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

Mode	Test channel	Ant. Pol.
2.4Gbps	2480MHz	Vertical

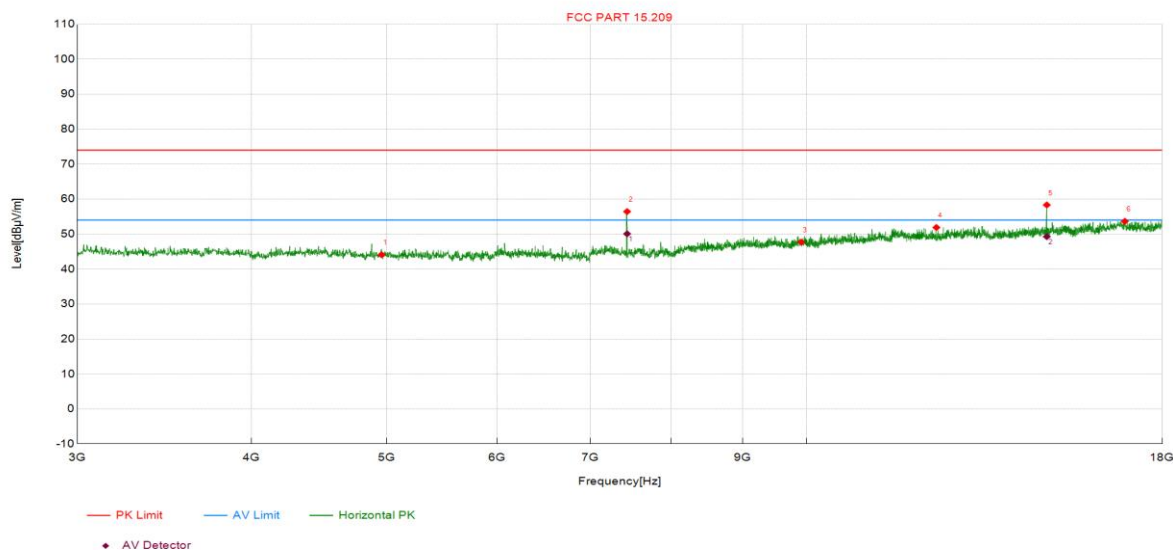


NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	4960.00	48.79	42.84	-5.95	74.00	31.16	PK	V	PASS
2	7440.00	59.25	55.55	-3.70	74.00	18.45	PK	V	PASS
3	9920.00	47.09	47.15	0.06	74.00	26.85	PK	V	PASS
4	12400.00	44.80	48.27	3.47	74.00	25.73	PK	V	PASS
5	14880.00	46.43	52.87	6.44	74.00	21.13	PK	V	PASS
6	17360.00	41.28	50.96	9.68	74.00	23.04	PK	V	PASS

NO.	Frequency [MHz]	Factor [dB/m]	AV Reading [dBμV]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Pol	Verdict
1	7440.00	-3.70	55.22	51.52	54.00	2.48	V	PASS

Note: If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

Mode	Test channel	Ant. Pol.
2.4Gbps	2480MHz	Horizontal

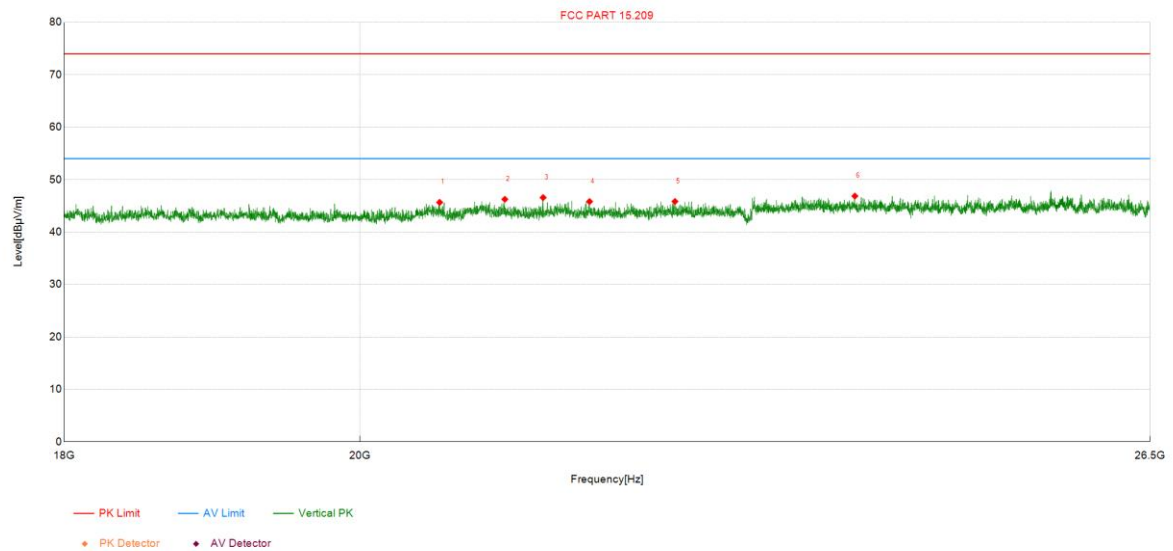


NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	4960.00	50.04	44.09	-5.95	74.00	29.91	PK	H	PASS
2	7440.00	60.15	56.45	-3.70	74.00	17.55	PK	H	PASS
3	9920.00	47.64	47.70	0.06	74.00	26.30	PK	H	PASS
4	12400.00	48.42	51.89	3.47	74.00	22.11	PK	H	PASS
5	14880.00	51.89	58.33	6.44	74.00	15.67	PK	H	PASS
6	16927.50	44.39	53.66	9.27	74.00	20.34	PK	H	PASS

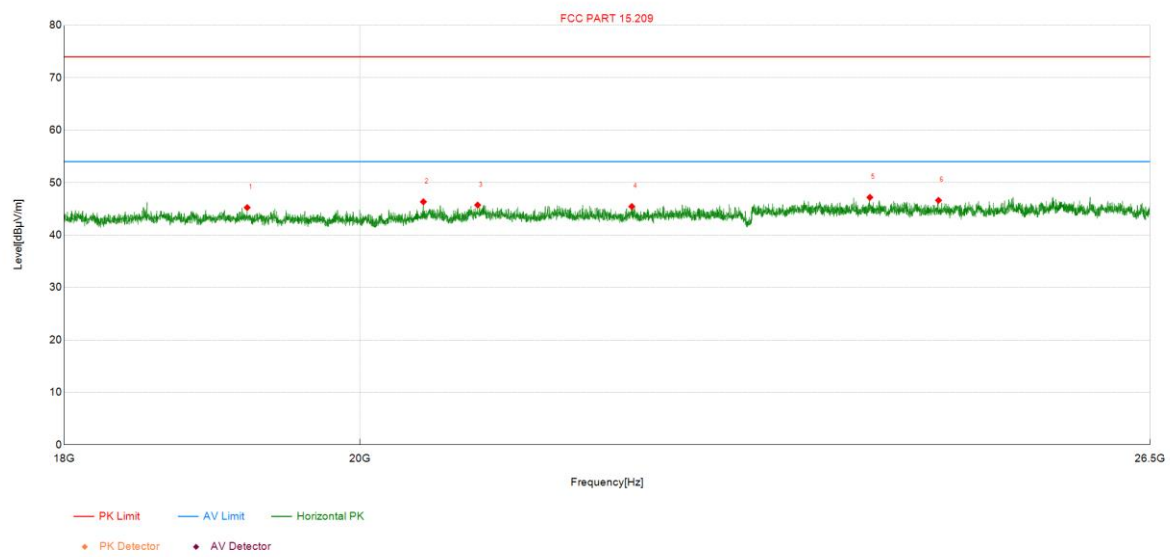
NO.	Frequency [MHz]	Factor [dB/m]	AV Reading [dBμV]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Pol	Verdict
1	7440.00	-3.70	53.78	50.08	54.00	3.92	H	PASS
2	14880.00	6.44	42.84	49.28	54.00	4.72	H	PASS

Note: If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

Radiated Emission test (18GHz-26.5GHz)



NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	20575.50	60.29	45.67	-14.62	74.00	28.33	PK	V	PASS
2	21058.94	60.61	46.25	-14.36	74.00	27.75	PK	V	PASS
3	21347.94	61.11	46.58	-14.53	74.00	27.42	PK	V	PASS
4	21703.88	60.25	45.82	-14.43	74.00	28.18	PK	V	PASS
5	22374.31	59.53	45.84	-13.69	74.00	28.16	PK	V	PASS
6	23855.44	60.16	46.87	-13.29	74.00	27.13	PK	V	PASS



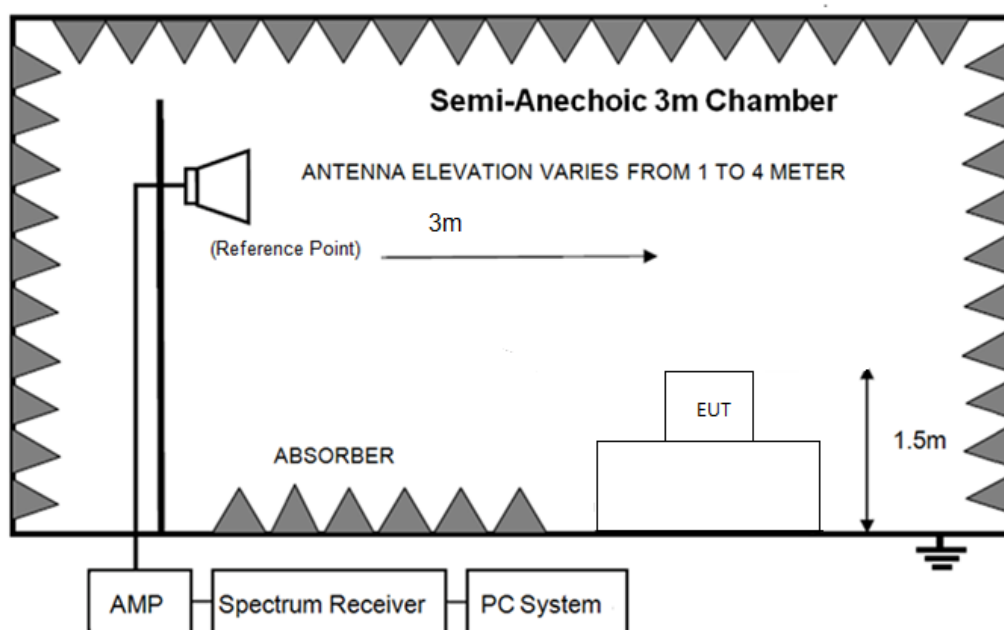
NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	19212.31	60.16	45.25	-14.91	74.00	28.75	PK	H	PASS
2	20456.50	61.04	46.35	-14.69	74.00	27.65	PK	H	PASS
3	20856.00	60.23	45.73	-14.50	74.00	28.27	PK	H	PASS
4	22033.25	59.54	45.45	-14.09	74.00	28.55	PK	H	PASS
5	23982.94	60.52	47.19	-13.33	74.00	26.81	PK	H	PASS
6	24576.88	59.89	46.63	-13.26	74.00	27.37	PK	H	PASS

10. Emissions in Restricted Frequency Bands

10.1. General Information

Test date	May. 27, 2026	Test engineer	Cheney Qu	
Climate condition	Ambient temperature	21.3°C	Relative humidity	74.5%
	Atmospheric pressure	100.7 kPa		
Test place	3m Chamber			

10.2. Block diagram of test setup



10.3. Limit

All restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions outside operation frequency band 2400 MHz to 2483.5 MHz shall be at least 20dB below the fundamental emissions or comply with FCC 15.209 limits.

10.4. Test Procedure

Same with clause 8.3 except change investigated frequency range from 2310 MHz to 2410 MHz and 2475 MHz to 2500 MHz.

Remark: All restriction band have been tested, and only the worst case is shown in report.

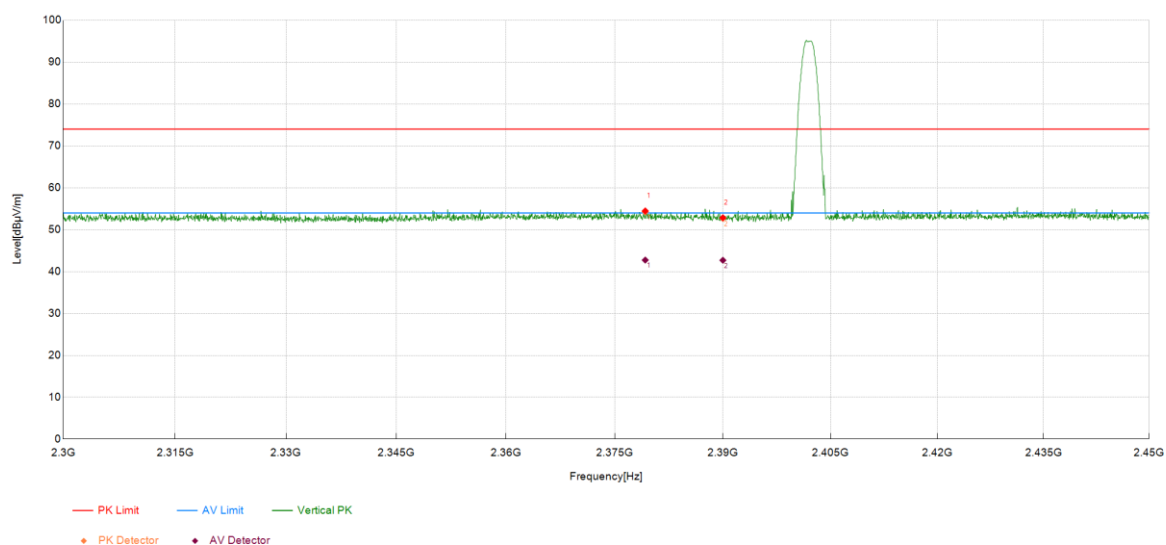
10.5. Test result

Pass. (See below detailed test result)

Radiated Emission Test Result

Mode	Test channel	Ant. Pol.
2.4G	2402MHz	Vertical

Test Graph

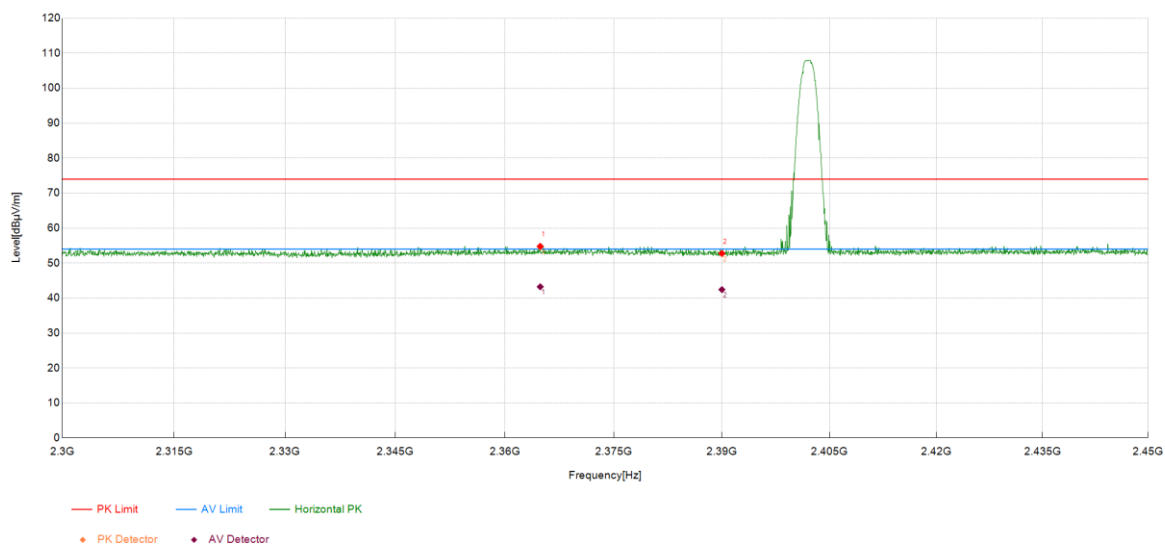


NO.	Frequency [MHz]	Factor [dB/m]	PK Reading [dBμV]	PK Value [dBμV/m]	PK Limit [dBμV/m]	PK Margin [dB]	AV Reading [dBμV]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Pol	Verdict
1	2379.23	-2.61	56.84	54.23	74.00	19.77	45.36	42.75	54.00	11.25	V	PASS
2	2390.00	-2.50	55.2	52.70	74.00	21.30	45.20	42.70	54.00	11.30	V	PASS

Radiated Emission Test Result

Mode	Test channel	Ant. Pol.
2.4G	2402MHz	Horizontal

Test Graph

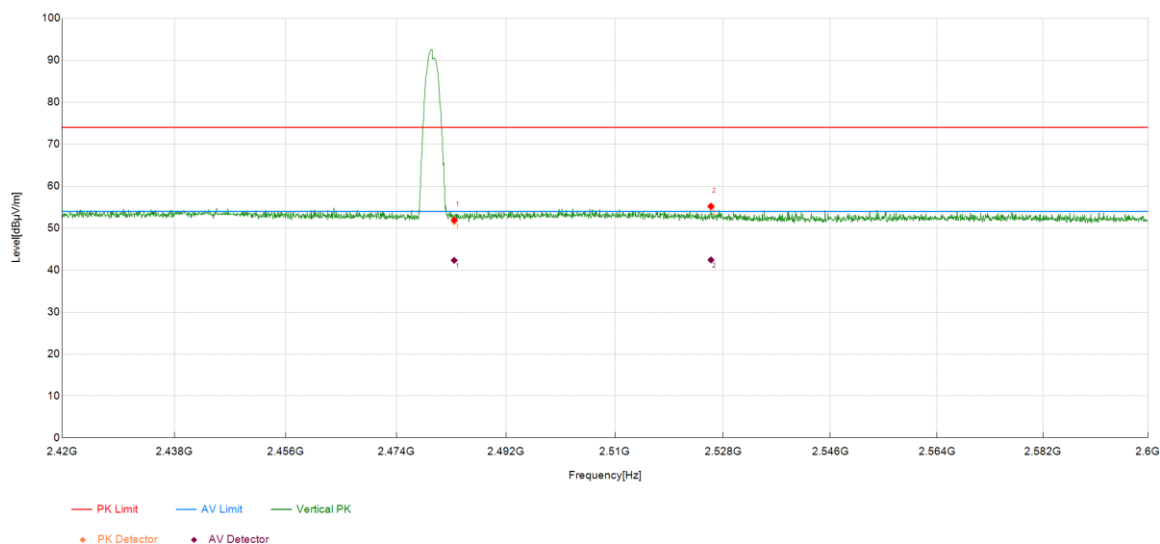


NO.	Frequency [MHz]	Factor [dB/m]	PK Reading [dBμV]	PK Value [dBμV/m]	PK Limit [dBμV/m]	PK Margin [dB]	AV Reading [dBμV]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Pol	Verdict
1	2364.87	-2.76	57.38	54.62	74.00	19.38	45.98	43.22	54.00	10.78	H	PASS
2	2390.00	-2.50	55.19	52.69	74.00	21.31	44.92	42.42	54.00	11.58	H	PASS

Radiated Emission Test Result

Mode	Test channel	Ant. Pol.
2.4G	2480MHz	Vertical

Test Graph

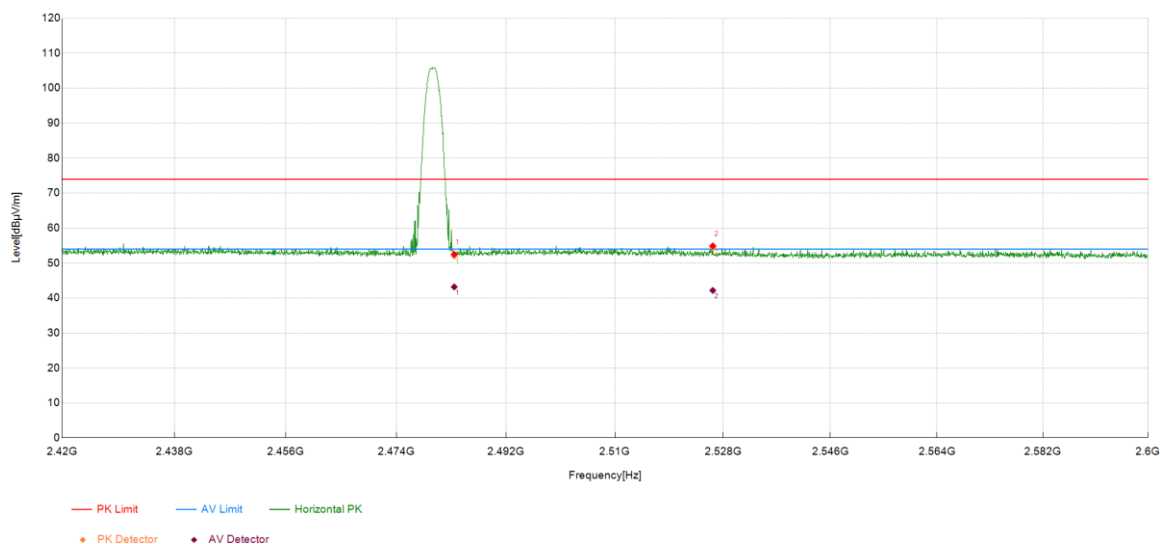


NO.	Frequency [MHz]	Factor [dB/m]	PK Reading [dBμV]	PK Value [dBμV/m]	PK Limit [dBμV/m]	PK Margin [dB]	AV Reading [dBμV]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Pol	Verdict
1	2483.50	-2.57	54.12	51.55	74.00	22.45	44.89	42.32	54.00	11.68	V	PASS
2	2526.00	-2.80	57.79	54.99	74.00	19.01	45.22	42.42	54.00	11.58	V	PASS

Radiated Emission Test Result

Mode	Test channel	Ant. Pol.
2.4G	2480MHz	Horizontal

Test Graph



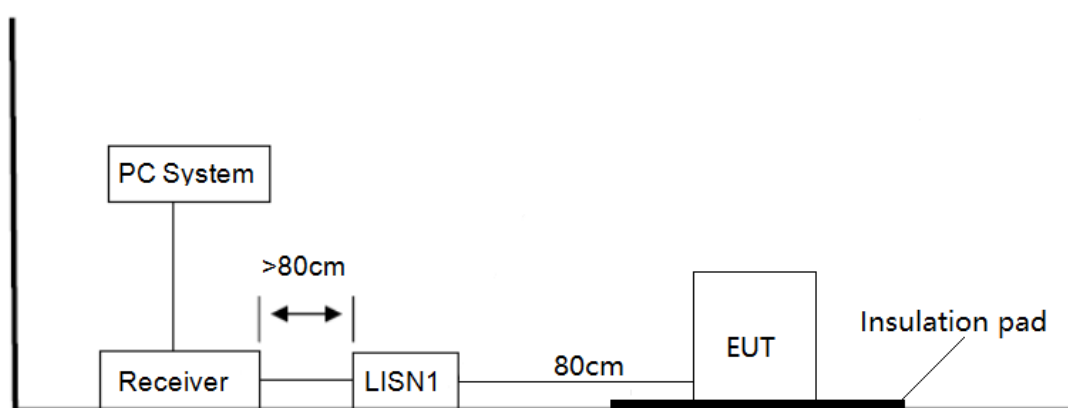
NO.	Frequency [MHz]	Factor [dB/m]	PK Reading [dBμV]	PK Value [dBμV/m]	PK Limit [dBμV/m]	PK Margin [dB]	AV Reading [dBμV]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Pol	Verdict
1	2483.50	-2.57	54.63	52.06	74.00	21.94	45.75	43.18	54.00	10.82	H	PASS
2	2526.30	-2.80	57.36	54.56	74.00	19.44	44.98	42.18	54.00	11.82	H	PASS

11. Power Line Conducted Emission

11.1. General Information

Test date	N/A	Test engineer	N/A
Climate condition	Ambient temperature	N/A	Relative humidity
	Atmospheric pressure	N/A	N/A
Test place	EMC Room 1#		

11.2. Block diagram of test setup



11.3. Power line conducted emission limits

Frequency	Quasi-Peak Level dB(μ V)	Average Level dB(μ V)
150 kHz ~ 500 kHz	66 ~ 56*	56 ~ 46*
500 kHz ~ 5 MHz	56	46
5 MHz ~ 30 MHz	60	50

Note 1: * Decreasing linearly with logarithm of frequency.

Note 2: The lower limit shall apply at the transition frequencies.

11.4. Test procedure

The EUT and Support equipment, if needed, were put placed on a Insulation pad, 10 mm above the ground plane.

Configuration EUT to simulate typical usage as described in clause 2.4 and test equipment as described in clause 10.2 of this report.

All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.

All support equipment power received from a second LISN.

Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.

The Receiver scanned from 150 kHz to 30 MHz for emissions in each of the test modes. During the above scans, the emissions were maximized by cable manipulation. The test mode(s) described in clause 2.4 were scanned during the preliminary test. After the preliminary scan, we found the test mode producing the highest emission level. The EUT configuration and worse cable configuration of the above highest emission levels were recorded for reference of the final test. EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test. A scan was taken on both power lines, Neutral and Line, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. The test data of the worst-case condition(s) was recorded. The bandwidth of test receiver is set at 9 kHz.

11.5. Test result

N/A

12. Antenna Requirements

12.1. Limit

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

12.2. Result

The antennas used for this product are PCB antenna and that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is only -2.02 dBi.

13. Test Setup Photograph

Please find the Test Setup photos of EUT in APPENDIXES.

14. Photos of the EUT

Please refer to the appendix file.

END OF REPORT